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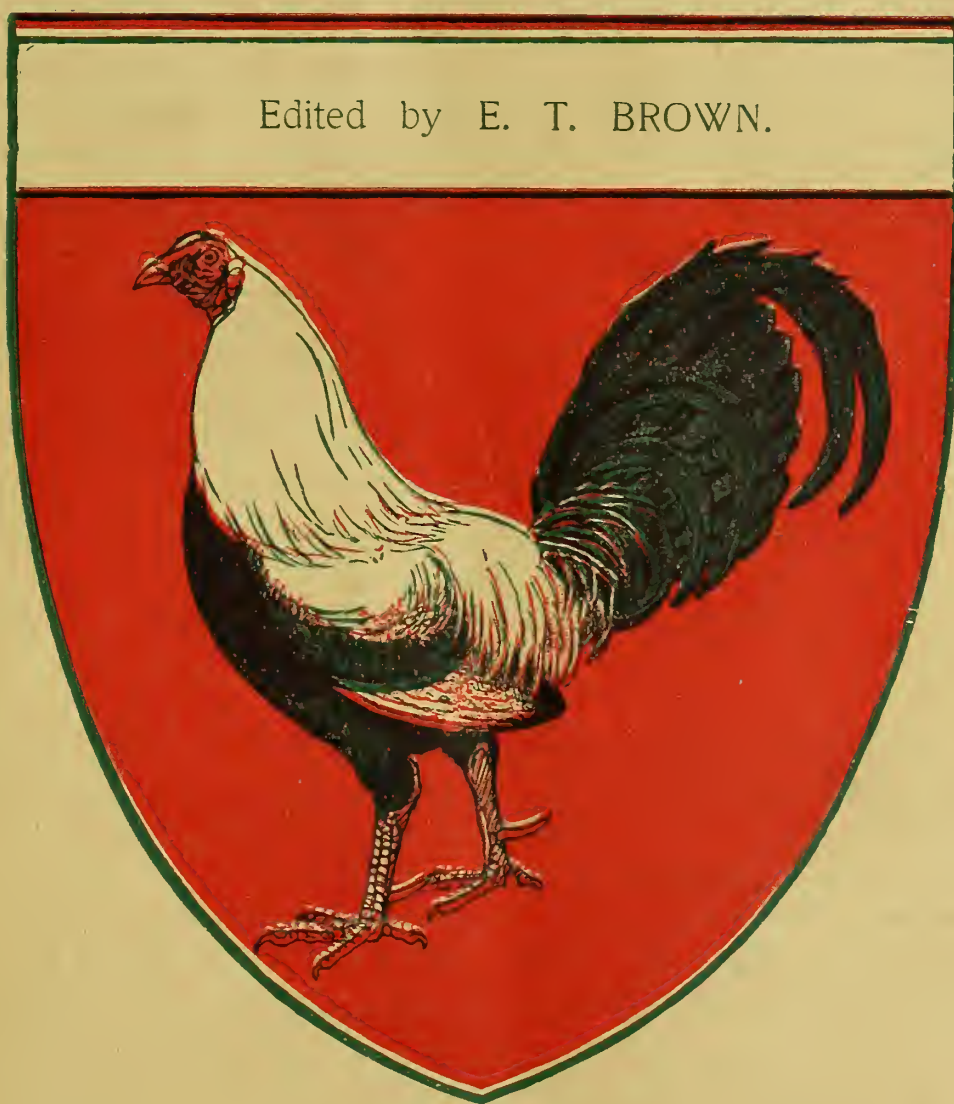
THE ILLUSTRATED POULTRY RECORD

NUMBER 1.

DECEMBER, 1914.

VOLUME VII.

Edited by E. T. BROWN.



QUARTERLY

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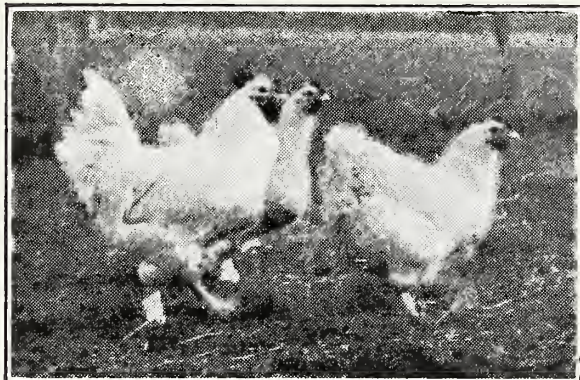
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CONTENTS.

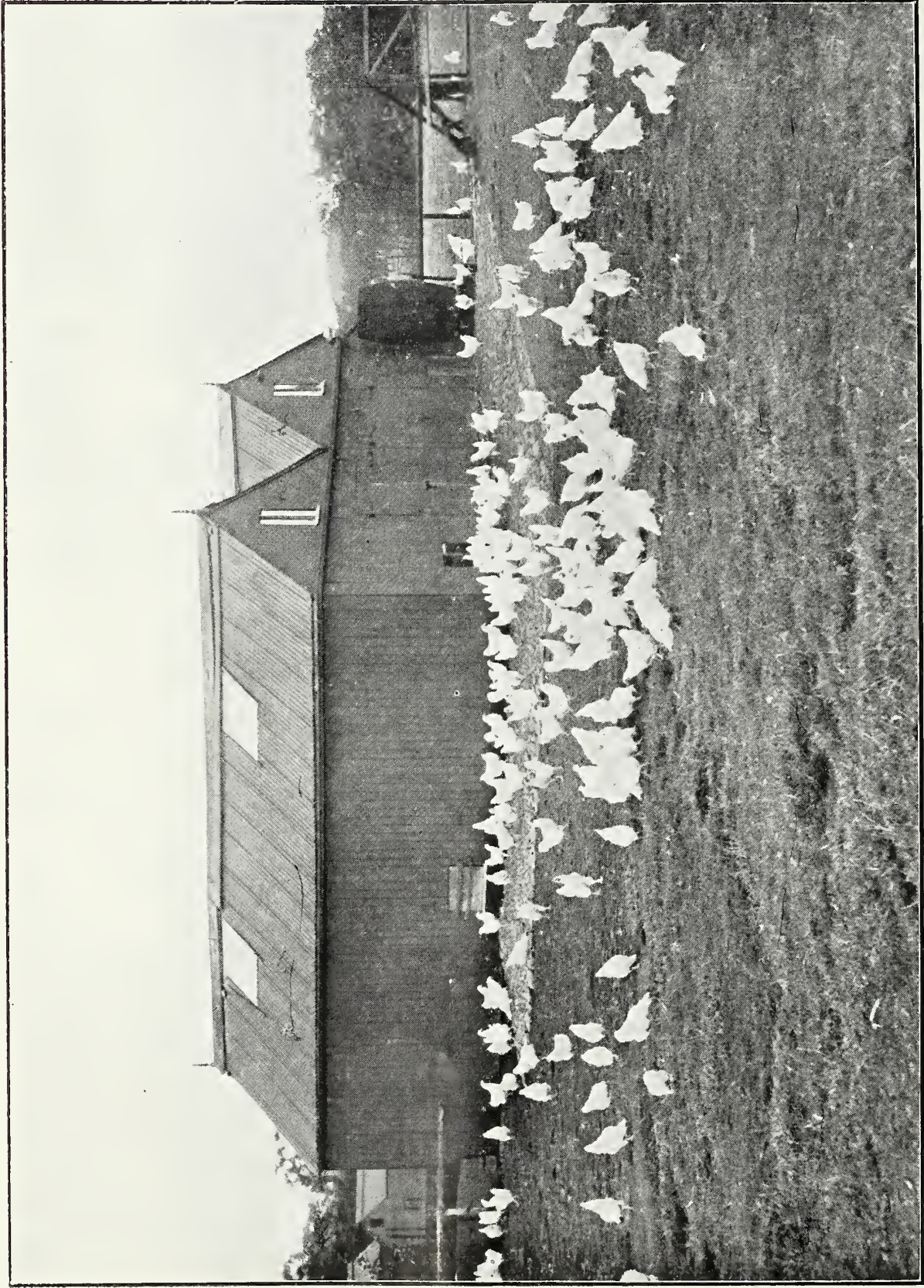
DIARY OF THE MONTH :	Page
A Personal Note—Poultry Leaflets	3
The Late Sir Walter Gilbey—Help for Belgium—Galicia and its Egg Supplies—Egg and Poultry Production—Co-operative Poultry Farming	4
High Fecundity and Mortality—A Glimpse at France—Eggs for Soldiers and Sailors... ..	5
LEADING ARTICLES :	
Poultry Bastilles By Edward Brown, F.L.S.	6
Bioscopical Views of Poultrydom By Enos Malpas	9
THE BUTTERCUPS AT BOYLE HALL By George Scott	12
U.P.C.'s LAYING COMPETITIONS	13
THE CONTROL OF AIR CURRENTS IN POULTRY-HOUSES AND BROODERS	
By Major Percy Hope Falkner, R.A.M.C.	14
THE WAR AND ITS CONSEQUENCES By Edward Brown, F.L.S.	17
CHRISTMAS HYMN FOR LAMBETH	18
WINTER HOUSING AND FEEDING By F. W. Parton (the University, Leeds)	19
FANCY AND PRACTICAL POULTRY-BREEDING IN BELGIUM	
By the late Louis Vander Snickt (of Chasse et Pêche)	20
STRICKEN POULTRY DISTRICTS IN BELGIUM—Liège and the Hervé Country	22
POULTRY INSTRUCTION AND ORGANISATION	24
BOOKS AND PUBLICATIONS RECEIVED	27
CURRENT POULTRY LITERATURE	28
COOKING CAPONS	30
SCOTTISH NOTES By H. Lammie	31
EGG AND POULTRY SUPPLIES IN WAR TIME	33
SHELTER FOR LAYING STOCK	34
TRADE ITEMS	36

INDEX TO ILLUSTRATIONS

ONE OF MR. T. BARRON'S LARGE HOUSES FOR LAYING STOCK	Frontispiece.
A RHODE ISLAND PULLET... ..	5
GEESE ON A HAMPSHIRE FARM	7
AN ORLOFF COCKEREL AND PULLET	10
A RHODE ISLAND RED COCKEREL	12
TWO UNBEATEN BUTTERCUP HENS	13
A BRITISH INTENSIVE POULTRY-HOUSE	14
THE TOLMAN FRESH AIR POULTRY-HOUSE	14
IMPROVED OPEN-FRONTED TOLMAN POULTRY-HOUSE	15
WOODEN FENCE ACTING AS WIND-BREAK	15
POULTRY-HOUSE ILLUSTRATING THE AIR CUSHION	16
FIRELESS HOVER SHOWING INEFFICIENT PADDED QUILT	16
FIRELESS HOVER WITH EFFICIENT PADDED QUILT	16
A MAGNIFICENT SPECIMEN OF AN AMERICAN BRONZE TURKEY	21
A PAIR OF DANISH ROUEN DUCKS	23
A TYPICAL BROWN LEGHORN PULLET... ..	25
A MOVABLE BROODER WITH A MOVABLE RUN ATTACHED	29
A LIGHT BRAHMA BANTAM PULLET	32

INDEX TO ADVERTISERS.

BABCOCK, Miss R. B.	Page ii.	MALINES POULTRY FARM	Page iv.
BOULTON & PAUL, LTD.	iii.	PARTON, F. W.	iv.
BROWN & LILLY, LTD.	33	SPRATTS PATENT, LTD.	viii.
CAM GLEN POULTRY FARM	vi.	STANLEY UNDERWOOD CO.	vi.
COLBECK, MRS. CHRISTINE	ii.	TAMLINS	35
COMBE BANK POULTRY YARDS	vii.	THE GRANGE, EASTCOTE, MIDDLESEX	iv.—34
DOBBIE, J. ALEXANDER, & CO.	iii.	THE INVESTOR'S MONTHLY MANUAL	vi
FARM POULTRY PUBLISHING CO.	vi.	WATERMAN'S IDEAL FOUNTAIN PEN	iv.
HILLS RUBBER CO.	34	WHITE, TOMKINS, COURAGE, LTD.	36
HURDLES, LTD.	vii.	WORCESTER POULTRY FARM	ii.

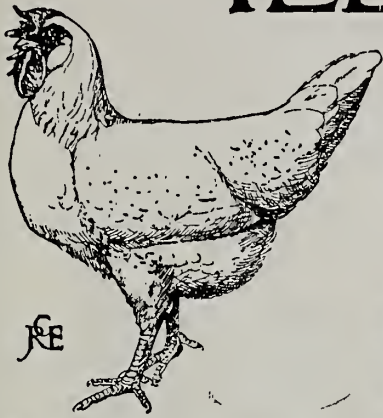


ONE OF MR. T. BARRON'S LARGE HOUSES FOR LAYING STOCK.

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These are some of Mr. Barron's famous White Leghorns, with which breed he has done so remarkably well in the American Laying Competitions.

THE ILLUSTRATED POULTRY RECORD



Vol. VII.—No. 1.

December 15, 1914.

Quarterly, Price Sixpence.

AN EDITORIAL DIARY.

EDITORIAL NOTICES.

TUDOR HOUSE, TUDOR STREET, WHITEFRIARS,
LONDON, E.C.

The Editor will be glad to consider any MSS., photographs, or sketches submitted to him, but they should be accompanied by stamped addressed envelopes for return if unsuitable. In case of loss or injury he cannot hold himself responsible for MSS., photographs or sketches, and publication in the ILLUSTRATED POULTRY RECORD can alone be taken as evidence of acceptance. The name and address of the owner should be placed on the back of all pictures and MSS. All rights of reproduction and translation are reserved.

The Editor would like to hear from readers on any Poultry Topics, and all Queries addressed to the paper will be answered by experts in the several departments. The desire is to help those who are in difficulty regarding the management of their poultry, and accordingly no charge for answering such queries is made.

The ILLUSTRATED POULTRY RECORD is published on the 15th of March, June, September, and December. Should readers experience any difficulty in securing their copies promptly they are requested to communicate immediately with the Editor.

The latest date for receiving advertisements is the 8th of the month.

The utmost care is exercised to exclude all advertisements of a doubtful character. If any reader has substantial grounds for complaint against an advertiser, he is requested to communicate at once with the Editor.

A Personal Note.

After mature consideration subsequent to the publication of our September issue, and consultation with those who have been our best supporters and advertisers, we decided under present circumstances to issue the ILLUSTRATED POULTRY RECORD quarterly instead of monthly, which course we propose to follow while the war continues. So great is the absorption of people's minds in the great conflict now being waged, together with the interference to ordinary avocations, that this course appeared the wisest to adopt, especially in view of the fact that one of the main sources of revenue in a magazine of this class—namely, advertisements—are forthcoming to a more limited extent.

We are glad to say that our supporters have unanimously agreed to the decision referred to. Many publications have been entirely suspended, but in view of the importance of keeping the poultry industry in active operation, and the necessity for its extension to meet our national requirements, we hope that the present arrangement will meet the special circumstances. When the war is happily over, our intention is to resume the usual monthly publication.

Poultry Leaflets.

The Board of Agriculture has shown commendable activity in efforts for increasing the food resources of our own country in many directions, the effect of which will be seen in the future much more than can be now the case, and should profoundly influence the farming of the kingdom. Every phase of cultivation and of live stock is involved. We may expect to see much greater areas devoted to food production rather than to pleasure and sport, making the country less dependent upon imported food supplies. In this way a decided impetus is

being given to utility poultry-keeping, evidences of which are already apparent in a greater demand for that class of breeding stock. In addition to the special poultry leaflets noted in our last issue—namely, Nos. 2. Notes on Poultry Feeding; 3. Poultry on Allotments and Garden Plots; and 4. Poultry as Farm Stock—three others have been issued as follows: 12. Notes on the Purchase and Preparation of Food for Poultry in Gardens and Allotments; 13. Marketing of Eggs; and 14. Poultry Colonies on Farms. Copies of these leaflets can be obtained free of charge on application to the Secretary, Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W., and readers would render a useful service by obtaining supplies for distribution. We understand that upwards of a quarter of a million of these leaflets have already been issued. Other excellent leaflets are also published dealing with cultivation, which might fitly be distributed in the same manner.

The Late Sir Walter Gilbey.

In the passing of Sir Walter Gilbey, Bart., at the ripe age of eighty-three, there has gone from us one who, in addition to his many activities, helped forward the table-poultry section of our industry at a time when such help was valuable in the extreme, chiefly by securing the inclusion of dead-poultry classes at the great Smithfield Show. Up to 1895 the committee of that exhibition had declined to recognise poultry in the only way possible to them. Mr. Edward Brown and Mr. C. E. Brooke brought the question before Sir Walter Gilbey, who took the matter up with his usual determination. Even he, however, was unable to accomplish all he desired, and finally offered to finance the section. A special committee was formed, on the invitation of Sir Walter Gilbey, with himself as chairman, consisting of Mr. W. Bellamy, Mr. C. E. Brooke, Mr. Edward Brown, and the late Mr. W. B. Tegetmeier, with Mr. A. L. Charlton as secretary. This body conducted the show for some years, when it was taken over by the Club and remains a feature of the annual exhibition at Islington. As a recognition of his services Sir Walter Gilbey was made an honorary member of the Poulterers' Company of London.

Help for Belgium.

The devastation in unhappy Belgium, innocent victim of European rivalries, is greater than any of us have realised. When the tide of war has rolled back there will be revealed a condition of affairs which will profoundly move the entire world. The first step must then be to restore the country as soon as possible, though years will elapse before it regains the former degree of prosperity. All must do what they can, poultry-breeders as well as others. We are glad, therefore, to make special reference to the movement inaugurated in the *Feathered World* for making

gifts of fowls, eggs for hatching, &c., when the opportunity is afforded for distribution in Belgium. Already some hundreds of promises of support have been received, and it may be expected that the list will be greatly augmented. Apart from sympathy with a people that are suffering so greatly, and without any responsibility for the war now waged, the British nation has a duty to perform in this connection which all must share. Promises should therefore be sent to our contemporary.

Galicia and its Egg Supplies.

Belgium and France are both great poultry countries. Another in which the industry has been highly developed of late years is Galicia, which is also being war-swept. Vast quantities of eggs are exported every year, of which Germany has taken the larger portion, although some have come to the United Kingdom. What the conditions are there we know to a very limited extent, but, with the huge armies traversing that section of Europe and the wide range of conflict, it may reasonably be supposed that production will be greatly reduced, due to destruction of the stock, and it is not improbable that the same will take place in other parts of Austria-Hungary. What has previously been pointed out—namely, the need for enhancement of home production, not alone to meet present-day requirements, but in view of the future—is becoming increasingly evident.

Egg and Poultry Production.

That the United Kingdom is capable of producing all the eggs and poultry required is recognised. In this connection will be remembered figures published three or four years ago in the *Journal of the National Poultry Organisation Society*, showing the capacity of each county in Great Britain, from which it was evident that upon the basis of three fowls per acre of cultivated land production would not only be equal to present consumption but provide for a very large increase. The difficulty is to bring these facts home to farmers and others who have so great an opportunity if they but took advantage of it. With a view of accomplishing what is so necessary, several of our provincial contemporaries have published figures relating to their respective counties, some of which are very striking. For example, taking Sussex, in which production is probably greater than in any English county, it is shown that the present number maintained is 547,353, whereas on the three fowls per acre basis there would be 2,243,130, or an increase of 1,695,777. Expressed in money values, the advance in annual returns would be £474,644 per annum.

Co-operative Poultry Farming.

Among the many proposals made for extension of the poultry industry is that of a writer in *Poultry* who suggests the adoption of what is

called co-operative poultry farming. That there is a great advantage in unity of effort on the part of a large number of people operating within a given area is unquestionable. That has several times been pointed out in the ILLUSTRATED POULTRY RECORD. In fact, development of what may be termed district poultry industries is the line of success, as evidenced in many parts of the country, notably Sussex and Bucks. The more of such advance the better, as isolated action is seldom satisfactory. An essential factor is an increased bulk within a given area and a large measure of uniformity in production. Such is, however, totally different to co-operation in the way intended, although that can be applied either for the purchase of requirements or the sale of produce.

High Fecundity and Mortality.

Mr. Oscar Smart, in one of our weekly contemporaries, makes statements which, but for the absorption of poultry-keepers by national issues, would have commanded a large measure of attention. He says:

I have found—and nearly every breeder can support me—that when the high fecund factor is introduced from both parents that the mortality among the offspring is enormous. This terrible mortality, especially among the best laying strains of White Leghorns, is rapidly on the increase; the chickens literally die like flies, and this seriously impairs the profit to be derived from them. . . . Increased mortality among the offspring is highly correlated with the evolution of the heavy layer. It is more pronouncedly marked in high fecund strains than in relatively low producers. Take the high fecund Leghorns and the low fecund Sussex as illustrating the point. Feed and manage both alike, and the mortality among Sussex is as nothing to the mortality among Leghorn chickens.

The question here raised is of very great importance, and we should welcome the experience of breeders before referring to the subject more fully.

A Glimpse at France.

The brief, all too brief, article which we print this month, giving some observations by Mr. Edward Brown, made during his visit to France last month, will be read with considerable interest. From this it is evident that the greater part of the French people not actually engaged in the Army are pursuing their ordinary avocations, and that more than ninety per cent. of that country is able to continue in the all-important work of food production. That is a great asset to any nation, and is where a farming community has in war time great advantages over one engaged in commercial and industrial pursuits. A further factor, alike for the English and French, is that the ports are open, so importation of whatever is required can continue. It is suggestive that on the outbreak of war the French Government removed all import duties on what are regarded as necessities, which has had the

effect of preventing rises in values. Mr. Brown is to be congratulated upon having made this trip at such a time.

Eggs for Soldiers and Sailors.

The needs of our wounded soldiers are very great, and it behoves all to do whatever is within their power to help them. A scheme has been adopted, due, we understand, to the initiative of



[Copyright.]

A RHODE ISLAND PULLET.

The property of Mrs. Colbeck. (See pages 12 and 13.)

Mr. F. Carl, of our contemporary, the *Poultry World*, for the making of a weekly national egg collection, which we commend to the cordial and whole-hearted sympathy and support of every reader and every poultry-keeper throughout the country. It is hoped to collect 20,000 eggs weekly, which should be easily accomplished, if not at once, within a very short time when hens are laying more freely than at present. Unfortunately, as a result of the periods between our issues we cannot help to the extent that might otherwise be the case, but at the same time our desire is to do all we can in a noble effort. Already a large number of collecting depots have been established, and many more will be formed. All who are willing to share in this noble work should send their promises to the hon. sec., Mr. R. J. Dartnall, 154, Fleet Street, London, E.C. One of the most pleasing features is that at this time of national need rivalries are forgotten, and in addition to our contemporary already named, *Poultry* is uniting with it to promote this grand effort. Those who have not eggs to send may contribute money to help the scheme forward.

POULTRY BASTILLES.

By EDWARD BROWN, F.L.S.



ONE of the most interesting times which recur to my memory is concerned with the days spent in Paris during the celebrations at the hundredth anniversary of the fall of the Bastille prison, which event took place on July 14, 1789. The French capital was en fête. From the Place de la Bastille along the long line of the Rue de Rivoli, to its termination in the Place de la Concorde, at night it was a tunnel of light. That route led to the bridge across the Seine, the Pont Neuf, which was built of stones that had formed the Bastille, torn down by the exasperated citizens, who were determined that the prison wherein so many hapless souls had ended their days in sadness and misery should no longer reverberate with despairing cries and bitter sufferings. It is well that inert stone or timber can tell no tales, or the voices we should hear would indeed be terrible in many cases.

GYRATIONS OF POULTRY-KEEPERS.

The ways of poultry-keepers are past finding out. Their gyrations are interesting, perhaps all the more because they are so puzzling. At one time it appeared as if fanciers were the chief culprits in this direction. They, however, have been far outdistanced by utility men who, within the last half decade, have gone from one extreme to another. I know that in all progression there are ebbs and flows, that the higher a tide the lower its return. So long as these make for actual advance, they are welcome. The question must necessarily arise, how far these temporary phases are working for permanent progress. That will depend upon their conformity to Nature's requirements, which will be the supreme test, and which is not yet determined.

INTENSIFITIS.

Five years ago, when there broke out the malady that is yet running its course with especial virulence, though checked by the outbreak of war, to which the name *intensifitis* has been given, it was all in the direction of small, low coops holding half a dozen fowls. That I called "Bird Cage Methods of Poultry Keeping" (see *POULTRY RECORD*, December, 1911). It was what the late George P. Burnham termed "Hen Fever," in a very severe form. This Transatlantic infection was heralded as the greatest discovery of Poultrydom—that is, by novices and even others whose imagination led them astray. Fortunately the great majority of poultry-keepers were not infected and went on in their normal course, realising that, whilst such method might be useful when properly applied in the case of back-yarders, it had

not even the chance of success commercially if operations were conducted on a larger scale. The pictures of dozens or even hundreds of these little cages massed together with merely passage-ways between, revealed a waste of material and of effort that was appalling. The story has never been fully told, possibly never will be. One of the most suggestive facts is that the American poultry journals, some of which at one time were full of this system, are ominously silent. "You cannot hurry the daybreak."

THE OPPOSITE EXTREME.

That was looking through the telescope the wrong way. It is now turned in the other direction, with the result that everything is magnified enormously. The actualities of life are not, however, what we imagine we see. Huge structures have been erected from a hundred to three hundred feet in length. Some are one-storied, others two. In fact, there is no limit to the height of these Bastilles if the system proved commercially successful, as there is always plenty of space above, and the air costs nothing. Were that so—I mean were this method profitable—we might expect to see hosteleries for hens with as many stories as in the great block known as Queen Anne's Mansions, overlooking St. James's Park. Such gyrations are very fascinating to me, more so than is an acrobat risking his neck every moment. I watch them with the deepest interest. The greater the extremes the more attractive are these to the onlooker. There is always something to be learnt, generally as to what we cannot, as well as what we can, do. There are, however, two classes of onlookers—those who criticise and those who sympathise. The latter often lack knowledge and a balanced judgment, so that they are easily allured by what they think they can see, failing to realise what is hidden. The former sometimes miss greater vision by a search for weaknesses and magnification of shadows. In the main, however, they render the greater service so long as the "I told you so" spirit does not blind them altogether.

THE HEN'S POINT OF VIEW.

My reason for using the term "Bastille" in connection with the more recent developments, which are as yet restricted to very few plants, is not the size, or the novelty, or general methods of administration, but that during the greater part of their natural life the inmates are imprisoned with no hope of escape, no opportunity for finding contentment in foraging around even a small plot of land, and obtaining those tit-bits of which the poultry-keeper thinks nothing and knows less. I am not suggesting that the hens are badly treated

or ill-fed, or that their every want, as far as known, is not anticipated. That is not the point. Some writer has said "Better be a poor freeman than a rich slave." Rudyard Kipling in his "Just-so Stories" suggested that animals were tempted into domestication by certainty of a food supply, which is not always assured when at liberty. I suppose all domestication means a measure of enslavement, in which, however, there are differences. If we take the case of hens kept under these ultra-intensive methods, in a house however roomy, space is still severely restricted, without any chance of changing anything in sight for months together; the hens are compelled to associate with the same companions, and forced to heavy laying. However justified

manency is that it shall be profitable in market egg production, again for reasons to be noted later. Unless that is so it must fail. There are no supplementary sources of return. The one opportunity which this class of house may have is that fowls kept in them will lay enough eggs, which, sold upon the market, will make an annual return sufficient to pay the heavy cost of initial equipment, labour, food, &c. What must be done is for those who advocate this system to produce an actual balance-sheet, complete and verified, showing every expense and all the income on the market egg basis. There have been several such places in operation for a couple of years at least. Such figures ought, therefore, to be available. I may be wrong, and if so am ready and eager to be



GEESE ON A HAMPSHIRE FARM.

[Copyright.]

we may be in adopting such a system to meet human needs, it cannot be described as anything other than imprisonment. In the North of England a common name for a union workhouse is the "Bastille." I feel, therefore, quite justified in its use so far as these hen prisons are concerned.

ARE THEY PROFITABLE?

Here we are up against a question no satisfactory answer to which has ever been given. That, however, must ultimately be the final test of the system. There are other considerations, some of which are noted below, but this is the Alpha and Omega. Moreover, the only hope of its per-

convicted, but I do not believe that any one of these "Bastille" poultry-houses has paid its way, much less left a reasonable profit for the owner. What is more, the worst is yet to come, where fowls kept under these conditions are used for stock. I firmly believe many of those who are enthusiastic in favour of this method sincerely believe it will succeed and lead to a vast development of the poultry industry. I wish it were possible for me to share their faith.

THE COST.

Everything of a business nature has ultimately to be determined by results achieved in relation to the expense of maintenance and pro-

duction. The wealthy poultry-keeper may build hen palaces, just as he erects costly greenhouses, not for the sake of the fowls or the plants respectively, but to gratify his own desires for the ornate. In such cases there is no question of a balance-sheet. It is impossible that such places can ever leave a margin of profit. We have to regard the enterprise as one of pleasure. It would not pay to keep artisans at the Hotel Cecil. That is for those who are spending, not earning money. Hens are essentially workers, and the basal line of expenditure must be in accordance therewith. In poultry-keeping, unless increase of capital expenditure and maintenance is compensated by adequate advance in returns, the result cannot be favourable. It may be well, therefore, to look at this question very carefully. I do so with an earnest desire to elicit information.

Capital expenditure on equipment has an important bearing upon the final results, though, possibly, not so great as increased cost of maintenance. From statements made it is evident that the cost of these huge "Bastille" houses works out at anything from 7s. 6d. to 12s. 6d. per inmate. When the necessary repairs and depreciations are added, to say nothing of interest on the investment, it will be found that few are below the last-named sum. The better built the structure the less these repairs and renewals will be, but the original capital involves a higher annual charge to begin with, and *vice versa*. Thus the final result is about equal. Apart from depreciation, which, at five per cent., is yearly 1s. per hen, to which must be added another 9d. for interest on the money thus invested, making 2s. in all. There are comparatively few people who are prepared to sink money on this scale, even where they are in a position to do so, though if the system could be proved financially sound the number would be appreciable.

FEEDING.

It is recognised that poultry can be fed much more cheaply when the birds are given free access to pasturage or arable land. As examples, when I was in America the farm poultry-keepers of Rhode Island stated that the annual food cost was a dollar per hen, in some cases rather less. On no one of the special plants visited, where all food had to be supplied, even where the birds were in small open runs, was that recorded at less than one and a half dollars, and in several cases it was higher. In this country pretty much the same results have been arrived at. It will be remembered that the food cost in the Harper Adams Laying Competition, 1912-13, worked out at nearly 8s. per head for the twelve months, and, so far as I have seen, no critic has suggested how that could have been reduced to any serious extent. There the fowls had open runs, though after the first few weeks there would be no natural food available. Further, in buying for six hundred

birds the quantities would be sufficient to enable the best terms to be obtained, and it is questionable whether anyone could purchase at lower rates, though under some special circumstances such might be the case. Thus we are justified in assuming that a fair average for food under similar circumstances will be 8s. per annum—that is, nearly 2d. per week each, and there will have to be careful management to keep it down to that amount.

LABOUR.

Under ordinary poultry-keeping conditions, where operations are upon a moderate scale, labour need not be regarded, for the profit made is abundant recompense. Under, however, "Bastille" or factory methods it must be taken into account. I am prepared to admit that an active, hard-working man can look after a couple of thousand birds, assisted at certain seasons by a boy. In that case, however, he will have to work hard, have very little time to spare, and when we take into account chicken hatching and rearing, to keep up the stock, collecting and packing eggs, book-keeping, cleaning and repairing houses, and the hundred and one daily or occasional tasks, it is difficult to see how the labour bill can work out at less than 1s. 6d. per bird per annum, and it may be much more. Sometimes this is kept down by securing pupils or improvers. That, however, is non-economic. Unless this branch of the poultry industry can be carried out as would any other industry, and pay all the necessary charges without such subsidiary and supplemental contributions, it fails as a business. The more intensive the method the higher must be the cost for equipment, feeding, and labour.

THE SUM TOTAL.

From what has been stated above, the annual expenditure may be calculated as follows for a 2,000 hen plant :

	s.	d.	
Interest, 5% on £1,500.....	0	9	per hen.
Depreciation on plant, 10% on £1,000	1	0	" "
Rent	0	1	" "
Repairs	0	6	" "
Labour	1	6	" "
Food	8	0	" "
Loss on birds, 6d. per annum	1	0	" "
Sundry expenses	1	0	" "
	13	10	" "

As against this may be placed 1s. 1d., the value of manure produced, bringing the total to 12s. 9d. If we name 12s. per annum, that is reasonable. I have not calculated or made any estimate as to mortality, which last-named is often an important factor, and is likely to become more so as the work continues, for I have no wish to overstate my case.

Taking 12s. as a basis of calculation, we find that at a penny per egg the average production

over the entire flock must be 144 eggs per annum to meet the actual expenses, to say nothing of interest on working capital, which must be substantial. In some instances, where markets are at hand, especially in the better-class residential areas, the average might be a little higher—say, 1s. 2d. or even 1s. 3d. per dozen, depending upon the proportion secured during the autumn and winter months. It is necessary, however, to leave a margin for eventualities. Therefore, it will be safer to adopt the penny per egg calculation. Consequently the amount of profit which will be realised must depend upon the average number of eggs above 144 per hen, or upon other methods of enhancing returns. Every twelve eggs beyond the number stated represents a profit of 1s.

Were it possible to attain an average of 180 eggs per hen per annum there would be a profit of £300. *So far, however, as I am aware there is no case recorded in which such an average production has been maintained over a series of years. Occasionally it has been accomplished for one year, but not more.* That is where the system has broken down, and explains the many failures which have been recorded in this and other countries. It is continuity which is the determin-

ing factor, and we are far from having reached that. I know of no instance in which the average of even 144 eggs per annum has been kept up for five years over entire flocks.

The fact is that all these theories have been and are being built up on narrow instances. A Chinese proverb says "You are going to fast. You look at your egg and expect it to crow."

PHYSICAL STRAIN.

There is another factor which must be referred to, though, having repeatedly called attention to it, I do not need to do more than mention—namely, the weakening effect of high production, the signs of which are seen on all hands, and will become more and more evident. Some of those who have taken up the side of poultry-breeding referred to above are seeking to increase their returns by sale of chickens, eggs for hatching, and stock birds. These are the last people who should do so. No greater disservice can be rendered to the poultry industry than by the use of "Bastille" poultry as breeding stock and by the dissemination of their eggs or the progeny obtained from them. That, however, is a question upon which I need not enlarge. The fact is incontrovertible. I only wish it were otherwise.

BIOSCOPICAL VIEWS OF POULTRYDOM.

By ENOS MALPAS.

IV.—THE WATER ROUTE.

THERE was great perturbation in the North-down Hunt. Subscribers to the funds growled and grumbled and swore at the succession of blank days. The committee fussed and fumed, blaming everybody—except themselves. They could do nothing, however, except make *sotto voce* observations as to the Master, though they did not dare to say much openly, as he paid the piper heavily for the glory of being M.F.H. As to that gentleman, he raged like a lion with the tooth-ache. The business was costing him a pretty penny, and he hated unpopularity. Most of his anger was vented on the huntsmen and keepers, and if strong language could have found a remedy it would have been discovered. In their turn these conceited and self-opinionated and spoiled gentlemen found themselves, for once in their pampered lives, reviled to an extent which had never been experienced before, and they did not like it. It is feared that their wives and whoever was subject to them had a bad time. Thus, from one end of the chain to the other every man metaphorically kicked the next one below him. Such was a source of satisfaction, though of no avail. It did not alter one iota the condition of affairs.

All concerned knew that there had been plenty of foxes. The cubbing season was a good one. The coverts were well stocked and equally well preserved. Everything betokened a successful hunting season. Then, as September approached, gradually the numbers were reduced, which continued. Day and night searches, doubling the watchers, and the private offering of rewards, were all tried without bringing the least light as to where the animals had gone to. It was thought that some had been trapped and sent away, but inquiries open and secret did not show a trace either by road or rail. To keep up the supply, as the hunting period was fast approaching, a considerable number were brought from Scotland. They also followed their predecessors, though the route was unknown. Then a batch was imported from overseas by means which were as surreptitious as they were illegal. Even that did not alter the state of affairs, as they, too, disappeared. Master, committee, and men, with the full force of the county police, who neglected looking after burglars and other marauders, by reason of superior orders, as the chief constable was a keen hunter, were completely baffled. When the hunting season opened there were practically no foxes.

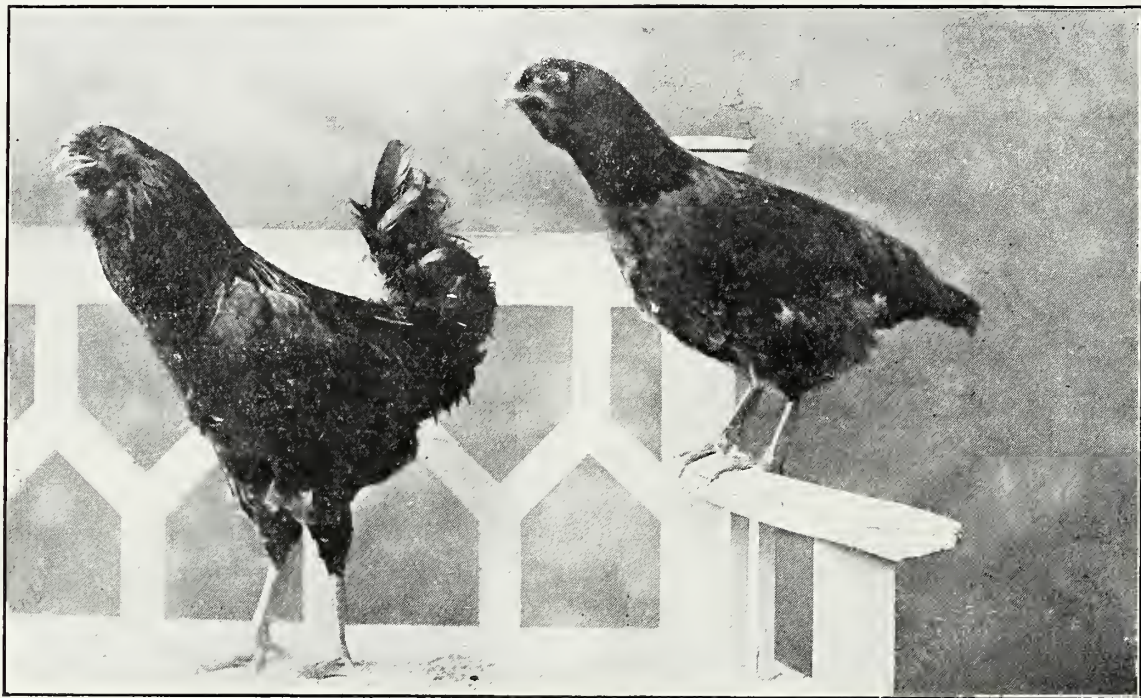
That was the pregnant fact that could not be controverted, in which case all the expensive organisation was useless.

It was a desperate position, yet one which had an explanation. It is my purpose to tell why and how it was done. As the occurrence was some years ago, and several of those concerned are dead, no harm can be done by the record.

The Northdown Hunt was thoroughly unpopular in the district, as a result of over-preservation and of its high-handed methods, although there were few who dared express what they felt, much less take any action. It was a county where farmers and others were practically afraid to give utterance to their opinions on this and many other questions. The hunt was autocratic in the extreme. Farmers saw their fields ridden over

they liked, and treated even farmers of standing with a large measure of contempt.

As a result of the losses sustained and the treatment received, there was a very bitter, if hidden, feeling throughout the district, probably unrealised by those who were most responsible for this condition of affairs. If they heard of it they felt strong enough to pay no attention or heed. Whilst dormant all that was wanted was an opportunity for expression. Now and again a fox had been caught and disposed of, which did little good, as there were plenty more to take its place. The district was surrounded by several important residential centres and was within reach of a great city, where was a large and lucrative demand for eggs and poultry. As a consequence many of the farmers' wives had gone in for



AN ORLOFF COCKEREL AND PULLET.

[Copyright.]

Winners at the last Dairy Show. The property of Mrs. Colbeck. (See pages 12 and 13.)

without compunction; their wives' poultry were killed in considerable numbers. Objections made and claims sent in were unheeded, or, if the latter were pressed, as in the cases of those who were more independent, these were paid in a grudging fashion that was almost insulting, as there seemed to be a suggestion that they were bogus. The fact was that the hunt was mainly composed and controlled by men who thought that their will was law, that fox-hunting was their right, no matter how it affected other people, and that a vulpicide was a scoundrel who ought to be hanged, and would be if it were not for beastly laws that had ruined the country. It is said "Like master, like man." Such was certainly the case here, for the huntsmen and keepers were insufferable by their domineering ways. They went where and when

poultry to a larger extent, whilst some of the cottagers followed suit when permitted to do so. In spite of many discouragements, poultry-keeping had steadily grown. At the same time the losses by foxes increased to an equal extent, so much so that in not a few cases the hens had been given up entirely or reduced to the lowest limit, especially in cases where it was not always easy to go round in good time and shut up the houses.

Such had been the position of affairs for some time. It may be freely acknowledged that when the news passed through the district that the foxes were disappearing there was general if not voluble rejoicing. The unknown individual who was responsible was regarded as a public benefactor, and many silent blessings were showered

upon his head. It must be recorded, however, that suspicion fell upon several persons, in some instances with unfortunate results for them. But nothing could be discovered, nothing proved. It was a good time for the hens and their owners, for returns advanced and profits increased. Could it be prolonged that would mean a large amount of additional returns and a better balance-sheet in each case, though that was discounted to some extent by threatened increases of rent and by grumbling on the part of merchants at their lessened sales to hunting men, and of huntsmen and others who feared loss of employment.

Towards the eastern border of the hunt area there lived an elderly maiden lady, occupying a fairly large house with ample grounds, some distance from which was a large spinney. She was well-to-do, the daughter of an Indian officer, who had left her this estate with ample means to maintain it. Her only brother was also out on the service of his country in the Far East. Between the two there existed a deep affection. He from time to time sent her presents of Oriental treasures gathered by him, as also of animals and birds, to which latter she was specially devoted, for their own sakes as well as that of the giver. Some time before the period of which I am writing he had forwarded a lot of fowls of a breed which had not been seen previously in this country. She had always been a lover of poultry, and as those now received appealed to her in so many ways she devoted her attention to this breed alone, of which a considerable stock was kept, and by their sale added an appreciable sum to her annual income.

In many ways she was eccentric, but not enough so to make her unpopular. Many laughed at her foibles, yet liked her for the sterling qualities she possessed, among which was a very charitable nature. On the poultry question she was undeniably a bore. That, however, was forgiven, as she had a most interesting personality, so that whether visitor or visited, her company was always welcome. She, too, had spent some years in India, and her mind was well stored with personal observations and knowledge, revealed by brilliant descriptions. Even those who came under the lash of her tongue when some of her pets fell victims to foxes had to bear the infliction humbly, as she did not mince matters. Every bird on the place was named, and when one was killed she felt a sense of personal bereavement. When the loss was preventable, her anger was great.

The house in which Miss Steward lived was an old-fashioned mansion on high ground overlooking the river, which latter must be nameless for obvious reasons. I had often visited her there, as it was not far from my home, and she had sought my advice in many directions respecting her fowls. The house was ancient, part of what had been a larger residence, some of the ruins of which still stood. It consisted of quaint rooms

and passages, a place of corners in all directions. Below were probably what had been dungeons, and the lady once told me that these had never been fully explored. The grounds were well laid out, not on modern lines, but with that ripe disorder which is ever beautiful. The surrounding fields gave ample scope for her poultry operations. With respect to views within and without, it was indeed a charming spot.

More than once Miss Steward had told the hunting folk that sooner or later they would suffer for their conduct in respect to fox preservation. When she got hold of any of the keepers near her place they felt the weight of her indignation. For their parasitic life she had nothing but contempt, as for their indolence. She attributed nearly all the losses to their negligence in not feeding the cubs and the older animals in winter. Yet withal, when the foxes began to disappear no one thought of holding her responsible, though their fondness for the spinney referred to might have been suggestive. Once or twice, however, watches were set there, but nothing transpired to help solution of the business.

It was not until some years afterwards that she told me the story, and then under promise of strict secrecy so long as she and her man, Job Woodford, lived. Both are now dead, so that I am free to recount it.

What led these two to devise a method of extermination was not alone their own losses, though these were far greater than anyone suspected. To avoid suspicion they had made no complaints for a considerable time, although within a few weeks nearly a hundred valuable birds, old and young, had been killed. It was the result, also, of visits paid to several farms where the same state of affairs was experienced, especially hearing the tale of a widow who depended mainly upon her poultry for a living, and who had seen the greater part of her young turkeys cleared off in a single week. When she made a claim it was refused with contumely. The almost insolent letter from the Hunt Secretary made Miss Steward's blood boil. That night her scheme was devised.

The spinney already referred to was about half a mile from her house. Some time before, when seeking for a lost puppy dog owned by his mistress, Job had discovered a passage way between the spinney and the underground dungeons, the entrance to which was hidden completely in a clump of brambles. The purpose for which it had been made no one could tell. The dog was traced through and an entrance to the house revealed. More than that, it communicated with an old water trap by the river, through which a side stream raced at ebb and flow of the tide, and as the sea was only three miles below, the current was very strong. Job discovered traces that the foxes knew something of this underground pas-

sage, as quite a number of dead birds were found there.

When once the plan of campaign had been determined it was not difficult to carry out. Job had undoubtedly been a poacher in his early days, and, as a gamekeeper for some years at a later period prior to entering his present employment, there were not many tricks he did not know. One of these was a method of attracting foxes. I do not reveal the secret, as that might be unfairly used. Bait was laid just within the spinney entrance to the tunnel, but only a small quantity at that point. Whatever this consisted of a desire was at once created for more. Like dram drinking, one taste roused a longing which must if possible be satisfied. About thirty yards further in were placed powerful traps which killed at once any animal within their grip, and near by the bait was placed in sufficient quantity to serve two or three at a time. The work was done with considerable skill and ingenuity. As the spinney was always a favourite resort of Master Reynard nothing had been thought by the keepers when the animals were found there in considerable numbers, and in this direction they were self-deceived. It may be explained that inside the passage was an old door, which was closed for two or three days at a time between each bag, as that was regarded to be the line of safety. In the way here briefly stated during a few weeks nearly a hundred and fifty foxes were dealt with. Had Miss Steward been desirous of decorating her hall with brush trophies she would have had an ample supply. She was, however, above that vanity, though on two or three occasions a couple were sent by surreptitious means to the Master.

To dispose of the bodies was not difficult. The secret passage was roomy enough for a big barrow, and every night after the traps were full Job wheeled the victims and threw them down a natural funnel or shaft giving direct access to the water. This was always done just at the ebb of the tide, when the deep and rapidly coursing stream carried them quickly down into the river. Before daylight they were well out at sea, so that no traces were in evidence. Had any been seen some distance below, no one would have suspected whence they came. It is, however, a fact that nothing of that kind was ever reported. Later on rumours were about that fishing smacks had occasionally noted a dead fox well out at sea from the river's mouth, and the suggestion was made that these had been conveyed by boat. Upon this theory the detectives worked for some time without effecting any discovery. Job was well able to learn all that was being said and done, and thus knew when and how to act.

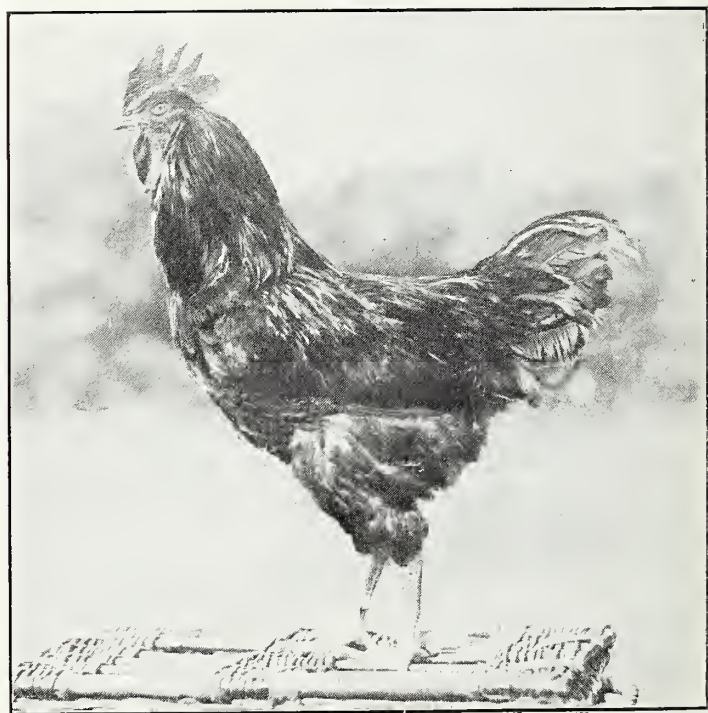
Such is the story of how a woman's wit and a man's cunning combatted the powers that be and taught a lesson to the Northdown Hunt, one which they never forgot.

THE BUTTERCUPS AT BOYLE HALL

By GEORGE SCOTT.

THE British public, and any other public for the matter of that, is a queer enough animal in its way. It has all the curiosity of a cow, tacked on to a scent for anything new that would put a bloodhound in the shade. And when the Sicilian Buttercup, heralded by much enthusiastic drumming, arrived on English shores, fanciers, being human, bought up every available bird and egg with a speed that in many cases outpaced discretion. Rejoicing in a name that, in itself, is a most effective advertisement, proudly wearing a unique comb, and following in the wake of some really remarkable stories, it made a decided impression at the very outset.

To-day its position, in Fancy and utility circles alike, is as secure as any breed can well be. For it possesses some really wonderful utility qualities, does this supremely active little Flower-bird. An unexcelled layer of white eggs, of a size that makes the purchaser wear the smile of infinite satisfaction, it is a real money-earner for farmer or back-yarder. And in these days of soaring foodstuff values the Buttercup's sparrow-like appetite is a point which will appeal with considerable force to the business man. Certainly the smilingly-active Flower-bird



[Copyright.]

A RHODE ISLAND RED COCKEREL.

possesses a pair of capable wings and, on occasion, can use them with exasperating effect; and the fancier who wishes to avoid his garden resembling a pig-run must adopt some very thorough measure of restraint. Add to this the fact that every egg does not contain a winner, and you will pretty well exhaust the bird's disadvantages.

Now the success of a new breed depends, to a very big extent, on the men, or women, behind it. And it is a matter of history that Mrs. Colbeck has had a very big share in bringing the Buttercup, not only to its present pitch of popularity, but also to its present

state of perfection. She started with the firm resolve to have the best breeding stock that could be obtained by the power of freely expended gold, and not until some of the cream of America's winners had found a home in the extensive grounds of Boyle Hall did she cry, Enough. These Americans, certainly the best Buttercups shown during this or any previous season, and still perspiring from their successful efforts in the States, did some very considerable winning at the summer shows, winding up a remarkable career with first and challenge cup in the old bird classes at Manchester Club Show.

But gratifying as are these successes, Mrs. Colbeck is most proud of a certain Buttercup pullet, bred and reared in her own yards, which at Manchester, and again at the Dairy, carried off the premier awards. It is very regularly marked on a rich ground, is this famous pullet; and I have a fancy that it will stand behind many red cards before its days are numbered. Nor is this pullet alone. In the numbers that Mrs.

after the briefest mention of the wonderful stud of Rhode Island Reds that have won a stack of red cards for Mrs. Colbeck. These Reds, with shape, size, vigour, and laying qualities, bear also the hall-mark of quality—that rich, brilliant, lustrous colour that calls for the enthusiasm and unstinted praise of the Red fancier.

U.P.C.'S LAYING COMPETITIONS.

THE final reports of the two laying competitions organised by the U.P.C. have been issued, and are very satisfactory. An examination of the details must be left for fuller consideration when the complete statements are issued. It is enough at present to record that in the contest at Harper-Adams College the high average of 187 eggs per bird has been attained, valued at 19s. The highest score of any pens was by a lot of White Leghorns (H. Sutton)—namely, 1,393; but this takes second place to a pen of White



TWO UNBEATEN BUTTERCUP HENS.

One of these was 1st Dairy and 1st Manchester, the only times shown. The property of Mrs. Colbeck, of Boyle Hall.

[Copyright.]

Colbeck has to pick from many there are which are fit for the keenest competition. But as yet they have never even seen a show pen.

These golden-hued, prettily marked hens and pullets made a fine sight as they flashed about on Nature's unmatched carpet. And the male birds, strikingly handsome in their brilliant red plumage, and conscious of it, too, as they strutted and flapped and capered about.

Distinctive as is the Buttercup with its unique comb, Mrs. Colbeck is also the owner of a remarkably fine collection of a breed which, for sheer peculiarity, combined with first-rate laying qualities, would be hard to beat. There are not many English fanciers who have ever set eyes on one of these Russian Orloffs, which are destined at no very distant date to battle for one of the foremost positions on the scale of popularity. For these Orloffs, both mahogany and spangled, with their wealth of feather, their savage beauty, their strange appearance, strike the eye and compel the attention of one and all.

But space is running out and I must write Finis

Wyandottes (G. B. Metcalf), which, while producing 54 fewer eggs, realised 3½d. more. Honours are fairly easy between the two breeds named. In the Sedlescombe competition the small flocks of four pullets have, as might be expected, proved the more productive, though not to any great extent. Mr. G. B. Metcalf's White Leghorns, which head the list, produced in the small flock section 913 eggs, valued at £4 19s. 0½d., and Mr. E. Cam's White Wyandottes, in the semi-intensive section, 898 eggs, valued at £4 14s. 9½d. It would appear, therefore, at first sight, that the smaller house tends either to larger eggs or to greater production in the scarce season. Which is the case will, doubtless, be revealed in the completed reports.

Roof Poultry Yards.

Intensification proceeds apace. An American contemporary tells the story of a Miss Sanderson, who is conducting a poultry plant, and with apparent success, on the roof of Quincy House, a large building in the heart of Boston City.

THE CONTROL OF AIR CURRENTS IN POULTRY-HOUSES AND BROODERS.

By MAJOR PERCY HOPE FALKNER, R.A.M.C.

A REPORT on the poultry-houses used in this country would expose some strange homes where the domestic hen is expected not only to maintain her health but to yield a profit to her thoughtless owner. Insanitary conditions due to filth and to absence of ventilation and sunlight are very prevalent.

Poultry-house construction is a subject with

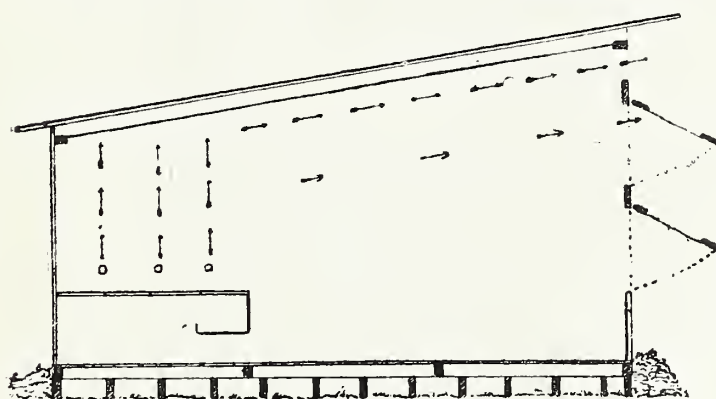


Fig. 1.—Section of a British Intensive Poultry-House.

which breeders of poultry cannot be too familiar. It is therefore intended to discuss here one group of principles bearing upon that right and proper ventilation absolutely necessary in every plan, whether intended for the making of a new house or the adjustment of outbuildings for poultry. In the past poultry-keepers gave but little thought to these matters; if up to date, they had a vague notion that ventilation was necessary, and therefore provided minute holes and apertures somewhere near the roof for the admission of air, or openings "at a convenient height," through opposite walls of the house, thereby creating a cross-draught fatal to success.

Now we have reached what is known as the open-fronted poultry-house, which consists of a suitable compartment or room tightly closed on all sides except the *open* front. This supplies the fowls with fresh pure air both by day and night—an arrangement similar to the open cubicles or sleeping quarters commonly used for the treatment of consumptive patients.

The "old-timer" tried to provide warmth for his poultry by unnatural methods, confining them at nightfall in an impure atmosphere, with the result that tuberculosis in one form or another robbed his own and other people's hen-roosts.

Animal heat is the outcome of a perfectly natural process—viz., the digestion by the birds of suitable and well-prepared foods. If the health of the birds is normal, the sugars, starches, and

fats contained in their food are readily assimilated and transformed into heat and energy. This is not the kind of heat provided by a close and impure atmosphere.

The open-fronted poultry-house is sufficient for every requirement and has come to stay. Its aim and object is the provision of absolutely open-air conditions without their disadvantages. Driving sleet, rain, or snow cannot benefit any animal; but, apart from these, the still and always fresh air of a modern hen-flat is not far removed from Nature.

Fowls housed upon the sanatorium plan lay more and better eggs than those badly housed; the chickens thrive and "make good" because they are the produce of healthy parents; the "open-air" hen lives longer, is much less susceptible to disease if properly tended, and is altogether more lucrative. The provision of a suitable atmosphere, free from draughts, and with as much sunshine as possible, at once lays a foundation for successful operations on the poultry farm.

DIFFUSION OF AIR.

Fig. 1 represents the section of a British intensive house. When the flock retires to roost large volumes of warm, damp air are expired by each unit. This heated atmosphere, being lighter than cold air, at once passes gently upwards until it meets the sloping roof. The tendency is still upwards and outwards, as shown by the

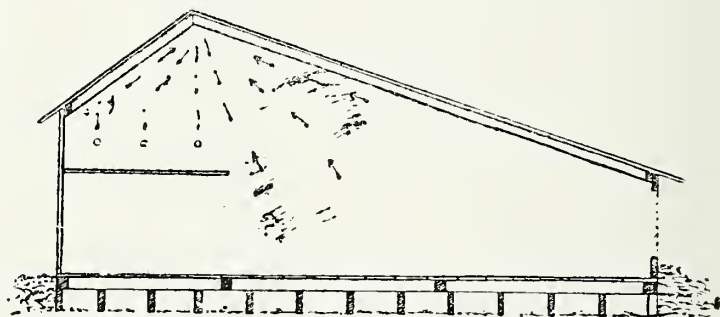


Fig. 2.—Section of the Tolman Fresh Air Poultry-House.

arrows, and it is obvious why the incline of the roof has an important bearing on ventilation.

When the air surrounding the flock rises, fresh, cool air passes slowly inwards to take its place. This new supply comes, of course, from the front of the house, through the lower rather than the upper half of its open front, but as there is no need to arrange specially for its transfer to the roosts the important point to consider is the outward passage of impurities. It will be pointed out later how this process is completed without draught, but

reference must first be made to another type of open-fronted house.

The Tolman Fresh Air House is shown in Fig. 2. The posterior side of the roof, located over the roosting quarters, is short, and takes an abrupt ascent to meet the upper end of the long anterior sections, which, in turn, slopes gradually toward the low, wire-covered, open front. This house is the invention of an American whose name it bears; and, so far as the writer is aware, was the first successful unit of the modern type of poultry-house. Tolman's design is still popular in the United States, where two advantages are claimed for it: (1) a rigid frame capable of bearing deep masses of snow that automatically slide off in due course; and (2) a contrivance whereby the animal heat given off from the flock is retained without any lack of ventilation.

Heated air takes an upward course as suggested by the arrows; but owing to the conformity of the roof it remains there, more or less, with all its impurities and is inhaled again and again by the flock. In order to prevent the cold draught from "striking" the hens at night the roosts are located above the level of the open front—an unnecessary precaution scarcely based upon sound principles of hygiene.

Fig. 3 outlines the section of an improved type open-fronted Tolman house. The design is that of Dr. P. T. Woods, an American authority. Arrows show the direction in which the heated and unwholesome effluents slowly pass outwards. Contrary to the "blind" apex of the Tolman design, Woods dropped the front section of his roof for a narrow adjustable window to extend from one gable end to the other, as illustrated in the section. This fitting not only allows direct sunlight to pass over and purify the roosting apartment—an extra light very necessary for the birds when scratching

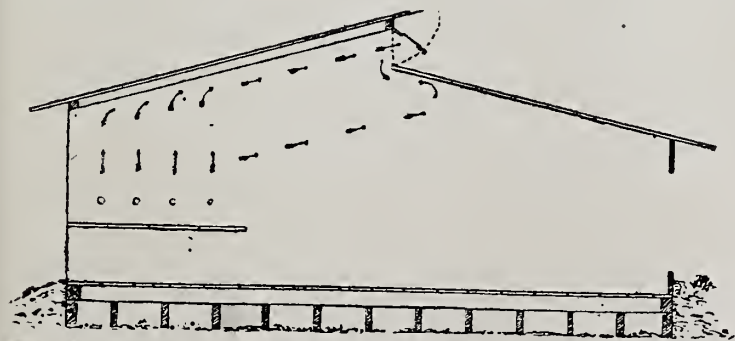


Fig. 3.—Section of Improved Open-fronted Tolman Poultry-House.

in the litter—but effectually clears away the impure atmosphere referred to in Tolman's plan. An explanation is given below of the reasons why the narrow cloth-panelled window cannot create draughts in the sleeping quarters.

MUSLIN-COVERED FRONTS.—When the open-air idea became fashionable many operators advocated the provision of muslin curtains and muslin-

covered windows in lieu of uncovered wire netting. They claim that this material excluded driving rain and at the same time admitted ample supplies of fresh air to replace the heated gases, which, they believed, also passed freely through the fabric—through wet cloth.

In the first place the term "muslin" as applied to poultry-houses is not literally interpreted. The

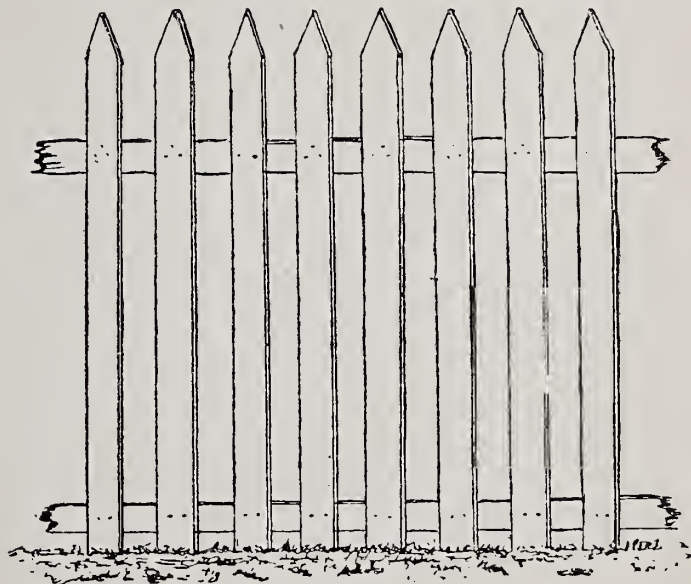


Fig. 4.—Wooden Fence acting as Wind-break.

writer has seen it, quite recently, too, represented by burlap sacking, and by a material, saturated with a heavy oil dressing, more like the sailcloth of a Thames barge. Having made some careful experiments in this direction the writer knows that even unbleached and untreated calico, comparatively light and open ordinary material, will prevent the passage of a strong air current, changing it into a slow diffusion: nothing more than a sluggish blending of the outer and inner atmospheres, strictly confined to a slight depth behind the cloth, and utterly useless as a means of admitting the thousands of cubic feet of fresh air essential to birds in the sleeping quarters. The cloth becomes air-proof during wet weather when ventilation is most necessary.

To realise this it is merely necessary to sleep in a bedroom during calm, sultry weather with open windows and closely drawn blinds. No matter of what material the blinds are made, open net or glazed cloth, obstruction to the entrance of air from without is at once apparent by comparing the atmosphere of the room when the blinds are raised with the atmosphere when they are lowered.

Cloth-covered window frames are often necessary to protect the litter from driving rain. They also admit light (glass is unsuitable for the purpose in view); but it must be borne in mind that their adjustment according to the state of the weather is an important part of every operator's routine.

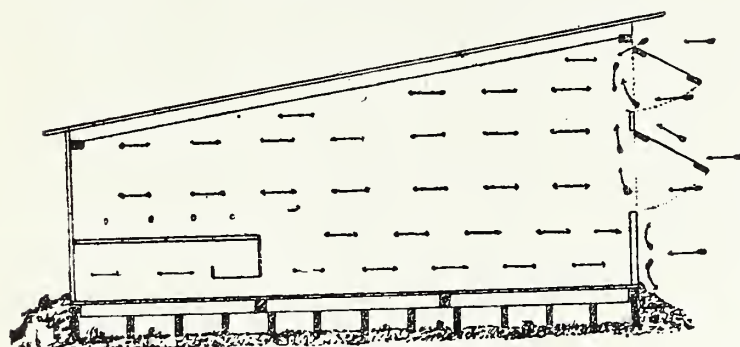


Fig. 5.—Section of Poultry-House, illustrating the "Air Cushion."

They should never be considered an efficient means of ventilation if closed: in this respect they are a delusion. In a sheltered location or during settled summer weather the house is really far better without them.

THE "AIR CUSHION."

What may be termed an "air cushion" is a partially confined section of the atmosphere which permits of diffusion but no circulating air currents. An example may be found in the very ordinary type of wooden fence represented in Fig. 4. Suppose there is a strong wind blowing. At first sight one might presume that it would pass between the bars with comparative ease. On the contrary, the structure "breaks" the wind to a considerable extent; in fact, there is a comparatively still atmosphere behind the bars, however strong a breeze may blow against their front surfaces. The section of five bars illustrates how this condition is brought

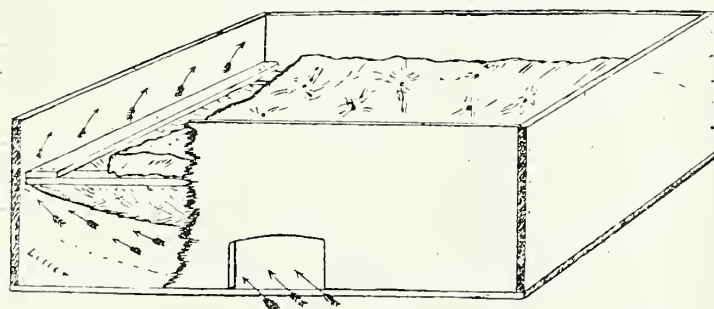


Fig. 6.—Fireless Hover, showing inefficient Padded Quilt.

about. Currents marked A turn inwards and backwards to a point facing each interspace, where they meet to form the "cushion" or buffer, to control and effectually prevent the currents marked B from passing through the spaces, thereby creating a lee side. It may be noted here that

this type of hurdle would afford useful shelter for stock ranging over wind-swept ground or for a poultry run located in an exposed position. A fence so made will not entirely resist high wind pressure like one completely covered with boards or iron sheeting, and is therefore less liable to injury.

As to Fig. 5, a strong wind blowing against the front of this house takes the course shown by the arrows. The inside double-headed shafts represent a perfect "air cushion," which turns back the wind, however strong it may blow; and every poultry-house should be carefully constructed with a view to the creation and maintenance of such a condition. The Woods type shown in Fig. 3 is perfect in this respect, for although it has a skilfully placed window behind the open front there is no draught as regards the sleeping quarters. If the important principle outlined is violated one must expect an unsatisfactory condition as regards freedom from draughts.

A brief reference may be made to the fireless brooder and its "air cushion"—whereby an environment free from circulating air currents is available for the chicks.

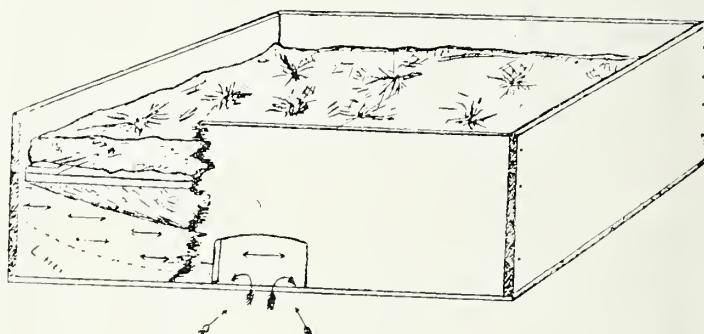


Fig. 7.—Fireless Hover, with efficient Padded Quilt.

Fig. 6 is a fireless hover with its front wall partially removed to show an insufficient and improperly placed padded quilt. Chickens so covered in cause an upward current by heating the atmosphere in their immediate vicinity: the air passes rapidly upwards between the frame and hover wall, also through the exposed calico which the frame supports, and unsatisfactory conditions result. To establish the "air cushion" the covering should be completed as shown in Fig. 7 (sheets of newspaper in addition to the quilt are often most useful for the purpose). The chickens will now generate and maintain sufficient warmth if the environment of the plant is, at the time, suited to the fireless method. The right kind of ventilation takes place by slow diffusion upwards, through and around the quilt, and also by way of the entrance to the hover, but it must be remembered that circulating air within this appliance is fatal to success and the greatest hardship that can be imposed upon the chickens.—*Journal of the Board of Agriculture.*

THE WAR AND ITS CONSEQUENCES.

By EDWARD BROWN, F.L.S.



DURING October there was an increase in the supplies of eggs from abroad as compared with September, though the quantities received were, as might be expected, much below what would otherwise have come to us. Such advance was due to larger shipments from Denmark, France, and Holland, which, whilst far from making up the deficiency in Eastern European supplies, did something to relieve the pressure. In addition 359,928 gt. hds. were received from Russia, via Archangel, which route, however, is now closed. These came in very moderate condition. Usually Russian eggs are conveyed nearly a thousand miles by rail from the producing areas to the Baltic ports. When we add on to that distance another thousand miles, over a single line with all its delays, to the White Sea, and the long journey around the North Cape ere our shores were reached, it is scarcely surprising that in respect to quality the results were unsatisfactory. A further point is that some shipments have arrived from America, though by no means great.

There has been as a consequence some relief of the pressure, which, combined with a largely decreased consumption for economic reasons, have prevented the high prices which some of us have feared. What might otherwise have been the case it is difficult to say. As it is, selected new-laid eggs have been sold at 24s. and 25s. per 120 wholesale, and retail at 3s. 3d. per dozen. At such rates consumption must be severely restricted. Even at 2s. 6d. per dozen householders use comparatively few. What is more suggestive is that for lower-grade eggs 1s. 9d. to 2s. per dozen has been demanded, instead of 1s. 3d. to 1s. 6d. in previous years.

Last month I had the opportunity of travelling through considerable sections of Central and Western France as far as Bordeaux, including parts of the great poultry districts of Seine-et-Oise and Normandy. West and south of the River Seine conditions were fairly normal, and with some exceptions it was difficult to realise that the nation was not only at war but that part of the country was the scene of terrible conflicts, and actually occupied by the German invaders. Crops had been harvested, farm operations, so far as required at this season of the year, were going on in the usual manner, cattle were abundant, and poultry could be seen clustering about the homesteads or out on the fields. In the autumn of the year the number of poultry is approaching the minimum of the entire year. What impressed me most was that, having traversed the districts on two or three previous occasions, I noted very

little change in the directions indicated—at any rate, west and south of Paris. That is a most satisfactory state of affairs, indicative of the fact that the food resources of our chief Western ally are well maintained. Napoleon the Great stated that an army fought on its stomach, and food is an all-important factor for every section of the community.

As I have previously observed, in France the production of eggs and poultry is almost entirely in the hands of farmers. One of the striking facts is that, even in the districts where the number of fowls kept is greatest, comparatively few are in evidence from rail or road. Ducks, geese, and turkeys are much more easily seen. Fowls scatter and group themselves to a lesser extent, and as the colour of their plumage is frequently in conformity with the environment, they are not easily distinguished until one is close upon them. The methods adopted are essentially distributive, which explains the important and profitable place held in almost every part of France by poultry. The Department of Agriculture estimates that the annual value of eggs, poultry, rabbits, and pigeons produced in France is seven hundred millions of francs. If a hundred millions be deducted for the last two, which is probably in excess of the fact, it means that eggs and poultry sold every year off the farms are in value £24,000,000. Considering the consumption that may be accepted as a conservative estimate. The point which should be emphasised is that these are farm products.

On the side of consumption great variations are met with. For instance, at Havre, which is the base of the English Army, the large number of troops passing through that port, around which are several great camps, the demand is greater than ever. It is a wonderful scene, upon which this is not the place to enlarge. Prices appeared to be almost normal; if anything, higher than usual. At Rouen, which is an industrial centre and affected very much by the war, consumption has fallen off considerably. Bordeaux has been for some weeks the seat of Government, in consequence of which the population has increased, as two thousand officials and their families were transferred from Paris, in addition to which are the various Embassies, all of whom have added to the bustle of that great city, and resulted in a great increase of demand for food supplies. I found, however, that even there the suspension of functions and festivities has had great influence. Eggs are about the usual price; if anything, somewhat above the average. On the other hand, poultry had fallen in values. This war has shown, both in our own country and

France, that the sale of high-class poultry is not so much for ordinary consumption as for special, which means that so long as present conditions prevail it is useless anticipating a return of former rates for the better qualities of poultry.

I have seen Paris under many conditions, but never the same as now. London is dark at nights, but not so much so as Paris. All shops, cafés, and restaurants are closed soon after eight p.m.; large numbers of shops in the best streets and on the boulevards are closed altogether, as are many of the residences. Hotels are empty, and there are no 'buses on the streets. When the Germans came within twenty-five miles of the city there was a great exodus, and visitors have been conspicuous by their absence. In the Halles Centrales there was a fair amount of business, for those left have to eat. Eggs at the time of my visit were dear, though not so high as in London, and could be bought at about 15s. per 120 wholesale, selling retail at 1s. 8d. to 1s. 11d. per dozen. Poultry of all kinds was very cheap, and I was told ran at about two-thirds the usual rates for the better qualities. The prospects for French poultry-breeders this winter are not very good.

Fortunately for France, the amount of territory overrun by the armies does not exceed seven to eight per cent. of the whole, so that there are vast areas to draw upon as yet untouched. Would that it were also true in Belgium! From interviews which I had with leading English and Belgian officials, it is evident that the greater part of that country has been swept as with a scourge. For some years Germany has imported large quantities of dead poultry from Belgium. When the Germans are driven out there will be few fowls left. Upon that more may be said later.

How to Escape the Spít.

The late Frank Buckland, so well known as one of the leading authorities on British piscicultural matters, was in the habit of retailing a funny story illustrative of the artfulness of common chickens. In former days it was difficult for visitors to get anything to eat at John o' Groats, there being no butchers or bakers within miles, and when visitors arrived it was the custom of the proprietor of the inn to chase and catch a chicken and pluck and roast him at once for dinner. In the course of time the chickens became so artful that they kept a sharp look-out, and when they saw a carriage coming along the road they bolted into the heather and did not reappear until the visitors had eaten their bacon without the chicken and taken their departure.

Dirty Eggs.

Professor Rice, of the Cornell University, says that "a dirty egg is a disgrace to the one who sells it." We wish that his sentence could be burnt into the minds of producers, and that vendors of dirty-shelled eggs felt the shame of it.

CHRISTMAS HYMN FOR LAMBETH.

PATRIOTISM FOR PAUPER CHILDREN.—"*The Lambeth Guardians yesterday decided that in order that the Poor Law school children may have an opportunity of appreciating the position of national affairs the usual practice of allowing each child an egg for breakfast on Christmas morning be suspended this year.*"—THE TIMES, November 12, 1914.

"*Lambeth is the site of the historic archiepiscopal palace.*"—GUIDE TO LONDON.

"*We are the boys of the Bulldog breed.*"—NOS OMNES.

HARK the Lambeth Guardians sing:
 Glory to the new-born King,
 Glory to the gun and sword
 That will teach the German horde
 In a way they'll not forget
 England still is England yet.
 We are also sons of Drake
 Who would strike for England's sake;
 We shall help to win the day
 In our more prosaic way.

None, we know, would dare suggest
 That we have not done our best
 In the past to educate
 Babes who sponge upon the State,
 To promote their civic sense
 And save the ratepayers expense.
 Should this education cease
 With the piping times of peace?
 No; and we know how to teach them
 In a way we hope will reach them.

Eggs have been upon occasion
 Instruments of moral suasion.
 We have brought from Scandinavia
 For the birthday of the Saviour
 Eggs which taught our infant folk
 To detest the foreign yolk,
 Eggs which would, we felt, remind them
 They must take things as they find them,
 And that little pauper hearts
 Are not even good in parts.

This régime, we think, suffices
 For the children's normal vices;
 But the want of public spirit,
 What return does this not merit?
 Loudly we in concert call
 They should have no eggs at all,
 Dock their food, and when they're starvin'
 They'll perhaps attend to Garvin.
f.f.f. Eggs is eggs, and eggs is dear,
 They shall have no eggs this year!

Guardians mine, so far so good
 This adjustment in the food;
 But, my Guardians, why, I beg,
 Go no further than an egg?
 If you'd have them not ignore
 All the full effects of war,
 Sell their beds and let them freeze
 Like the Belgian refugees,
 Go the whole instructive hog,
 Shell the workhouse, burn and flog.

Flog a few and shoot a few,
 You will surely, if you do,
 Rouse them from their lethargy.
 Though the weaker ones may cry
 For dead fathers and dead mothers,
 They will realise that others'
 Situation is much worse,
 And agree that war's a curse
 And imbibe a novel zeal
 For their native commonweal.

Thus when they with clearer eyes
 Are persuaded to despise
 Luxury, and cease to treasure
 A vain and empty life of pleasure,
 Duly chastened they will sing:
 "Glory to the new-born King.
 I am sorry, Jesus dear,
 I don't deserve an egg this year,
 Peace on earth and mercy mild,
 And Christ forgive a workhouse child."

Then, my Guardians, you will go
 Home to Alexandra Row,
 Chatsworth Terrace or "St. Ann's,"
 "River View," "The Den," "The Manse,"
 Justly proud of what you've done
 To repel the hated Hun,
 Hoping that it will afford
 Satisfaction to the Board;
 And round your Christmas table, heavy
 With things (thank God, we've got a Navy!),
 You will talk about the War
 And eat and eat until you snore.

J. C. SQUIRE

(in the *New Statesman*, November 21, 1914).

WINTER HOUSING AND FEEDING.

By F. W. PARTON (the University, Leeds).

IT is a very wise proceeding to allow the stock to remain at liberty for as long a time as possible, for they will thus be well equipped for winter laying and for rendering a good account of themselves in the breeding-pens when springtime arrives. With the approach of cold weather, however, the birds should be brought from all the outlying parts of the farm and placed in a position where shelter may be had. The bringing of the fowls from the open fields is frequently unduly delayed, but it must be remembered that special care is necessary during the autumn and winter months. Not only does this apply to birds that have been selected for future breeders, though this is, of course, of the greatest importance, but it is imperative that the same care be given to the general laying flock. Their treatment should be somewhat different; at the same time, the same care and attention should be lavished on both, and no detail in their management overlooked.

Housing is one of the greatest factors in determining the all-important question of profit. It is most certainly the man who can secure the largest proportion of the yearly yield of eggs in winter who can produce the most satisfactory balance-sheet. As a matter of fact, the method of housing is very largely responsible whether any eggs at all are forthcoming during the

cold and stormy months of the year. Unless housing is on the right lines—that is, proper provision made to afford the birds adequate warmth and shelter—all else will be in vain. However scientifically the owner may feed his fowls by giving a dietary properly balanced in all the necessary constituents, it will be largely neutralised unless the housing question has received the same attention.

In a cold, draughty house the inmates naturally require more heat, which is extracted from their food, since no assistance in this direction is obtained from the house, and consequently food which would otherwise go towards the production of eggs is required to provide bodily warmth. Therefore, while the farm colony system of housing is ideal in the spring and summer, it is not the most desirable method for winter.

The advantages of liberty are great and numerous in their variety, and where conditions will allow of freedom for eight or nine months out of the twelve, they ought to have this privilege. But, as we have previously stated, in winter different quarters must be provided.

In emphasising the supreme importance of warm housing in winter, it must not be imagined that we are in favour of artificial heat. A naturally warm house—that is, one that is properly constructed of stout material—is the sort that maintains the birds' health and in no wise impairs their vigour, and, furthermore, which goes far towards encouraging winter egg-production and the development of flesh. On the other hand, a house that is artificially heated is bad in every direction. The inmates suffer from lassitude when confined in the house, and when they come out into the open they are very likely to fall ready victims to any disease that may be about. In the present crisis, when every effort is being put forward to increase the output of eggs, we have had a large number of questions as to whether the yield might be increased by artificial heat in the house. It must be remembered that birds kept under such conditions are really like hot-house plants, in that they will fulfil the functions for which they are intended, but are quite unfitted to resist the harsher atmosphere when liberated.

If the house which is to be used for winter accommodation is constructed of stone or brick, it will effectually resist the cold, since the walls are thick. Moreover, such permanent houses are usually in the midst of other farm erections, which are probably occupied by other farm stock, and consequently a certain amount of warmth is naturally secured. Open-fronted houses are now becoming quite common, but they are doubtless better adapted for spring and summer accommodation than they are for autumn and winter work. Such houses may, however, be used in winter, provided that they are so made that protection is secured against the bleak wintry winds. This can be accomplished by having sliding shutters that can be adjusted as weather requires.

A covered shelter is an excellent addition and goes far to promote laying in winter. One hears a great deal about the advantages derived from keeping fowls under what is known as semi-intensive conditions. There is no doubt a great deal is to be said in favour of the system. On the other hand, there are weaknesses to be found. The weakness of the system does not, however, apply to its adoption in winter, since warmth, shelter, and exercise are provided—a com-

bination which is of great importance in securing eggs in winter.

During winter feeding should be on different lines to that in summer, since no one food will do equally well for both seasons. Take, as an instance, Indian corn. It is very strong in carbohydrates, and, as this element supplies bodily heat, it is of special value during winter and in cold exposed situations. Were this food given in excess during summer it would have an injurious effect. It should also be remembered that natural food is more scarce at this season, and this is a time of the year when it is of greater value than at any other season. A substitute for natural food must, therefore, be found, and there is nothing better than sound fish meal in this connection. If eggs are to be obtained in winter food must be very plentifully supplied, as the demand upon the system is much greater than at any other period of the year. A certain proportion of the food consumed is required to keep up the bodily heat. Therefore, a sufficient quantity of the right kind of food must be given for the dual purpose, or when the time comes the birds will be unable to withstand the strain of producing eggs in winter. As stated above, fish meal is excellent during winter, or meat scraps in small quantities, given at regular intervals, will be found of equal value.

Wheat and barley given alternately may be used as the staple grains, varied occasionally with maize, provided that maize meal is not included in the morning mash, and plenty of vegetables, cooked or raw. This method of feeding applies more to the general flock which is being kept especially as winter layers than it does to those birds that have been selected as spring breeders. These must have food of a very strengthening nature, but the food must not be of a too forcing character until the near approach of the time when the eggs are required for hatching purposes.

FANCY AND PRACTICAL POULTRY-BREEDING IN BELGIUM.

By the late LOUIS VANDER SNICKT (of *Chasse et Pêche*).

HALF a century ago the breeding of birds of all kinds, such as Budgerigars, Australian Finches, Doves, Quails, Pheasants, Waterfowl, Fancy Pigeons and Poultry, was universal in Belgium. Nearly every house had its aviaries, or small enclosures with water. The Zoological Gardens of Antwerp and English dealers at that time sold the greater part of these birds, and their products were disseminated all over Europe. But with the improvement of inter-communication the Belgian market has been flooded by the dealers of Marseilles and other ports, and foreign birds have lost their rarity and value, so that their breeding has died out. The Homing Pigeon fever killed the production of pigeons for fancy, for the table, and for sport. As a result many fanciers extended their aviaries and poultry houses, utilising them for Bantams and large ornamental fowls, chiefly of the Dutch and French races. The Zoological Gardens of Antwerp introduced directly from

China the large light-coloured Shanghais, and from Japan the Nanghasakis, now called Japanese in England. M. Geoffroy St. Hilaire, of Paris, sent us the Yokohama and Phoenix. The Zoological Gardens of Ghent bred on a large scale Buff Cochins and Silver Dorkings. At the beginning of the year 1860 the Société Linnéenne instituted its annual shows of flowers, fruits, vegetables, fishes, birds, pigeons, rabbits, poultry, &c. I myself won a large number of medals and diplomas with all kinds of poultry hatched from eggs obtained from the late Mr. James Watts, of Birmingham.

At the time named differences of opinion arose between financiers and practical poultry breeders, just the same as is now the case. Our country people did not appreciate fancy or foreign races, because, when kept in the ordinary farmyards, they were unable to find their own food. If fed by hand they did not repay in eggs and flesh their food cost, and, moreover, they often introduced all sorts of diseases previously unknown in the country. The Belgian peasants value a pigeon for the money it can make in the homing contests, a hen for her marketable eggs, a cock for his success in fighting. Otherwise they are worth just what they will sell for table purposes.

The light Shanghai cocks were called single-combed Brahmas d'Anvers, and have been used by producers of the famous Poulets de Bruxelles for crossing with the old breed known as the Coucou de Malines, itself an enlarged Coucou de Flanders with very white legs and skin, especially bred for fattening. That breed continues in great favour in the more fertile districts, where it can be raised and fattened in three to three and a half months. On the arid but warm, dry, and sheltered lands, where they can do no harm and may be grown until they are five and six months old, the enlarged Malines have been crossed again with the Combattant de Bruges, and have produced the Turkey-headed Malines. That new breed retains, I believe, the world's record for flesh production. Some specimens have been known to put on weight at the rate of 1 kilo (2½lb.) per month until five months old.

Standard breeding of poultry was introduced into Belgium in 1884, when British fanciers came over and exhibited their selected specimens at Ostend for the first time on the continent of Europe. I am sorry to say that up to the period named—with the exception, perhaps, of Antwerp and Uccle Bearded Bantams—line breeding was not applied in Belgium. The birds were simply picked up in the country and sent to the shows as they were. After the Ostend show, at the King's desire, breeders were informed by the directors of the Department of Agriculture that the Government was disposed to make grants for the extension of poultry-breeding, and suggested that a

society should be formed with authority to act with the central authorities. Thus was founded the Société Centrale. Rivalry ensued between Antwerp and Ghent, and ultimately the Fédération Nationale des Sociétés d'Aviculture de Belgique was established on August 31, 1898. From that time onward breeders devoted their scientific knowledge, intelligence, time, and money to the development of fancy, practical, and industrial breeding alike. As soon as it was known that Government money was to be distributed, a host

of new aviculteurs appeared, not with the object of contributing to the progress of poultry-breeding, but to secure a part of the money for themselves or their friends.

The aims of the federation, as stated in the statutes, are to encourage the different branches of aviculture, and specially to develop the Belgian varieties and such foreign breeds as can be advantageously introduced into the country. Sums of money are appropriated to societies who organise farmyard competitions or give instruction in this



A MAGNIFICENT SPECIMEN OF AN AMERICAN BRONZE TURKEY.

[Copyright.]

subject. The shows promoted are international and local. The amount distributed for farmyard competitions is regulated in accordance with the importance of the district. A special committee grants certificates to teachers, and annually about seventy-five courses of five lessons each are instituted. The federation also keeps a list of qualified judges. The programmes of shows must receive the approval of the president and secretary. The federation considers charges of fraud or dishonest

practices made against members or judges, and, if these are proved, pronounces temporary or permanent disqualification. It appoints committees charged with studying the best methods of feeding, fattening, &c., and it is hoped to establish a centre for teaching poultry-keeping. It issues marking rings and adds money prizes to those secured by the ringed specimens. It keeps the general stud book, and patronises the poultry sections of agricultural shows.

STRICKEN POULTRY DISTRICTS IN BELGIUM.

LIÉGE AND THE HERVÉ COUNTRY.



O anyone acquainted with Liège it is difficult to realise the great change which has taken place there and in the surrounding district. Until the early days of August it was the scene of industrial and agricultural activities. In and around the city the great ironworks and other manufacturing hummed with busy, peaceful life. On the hills around the numerous coal mines and their attendant villages, neat, clean, and tidy in the extreme, showed the signs of constant vigour. All the country round, eastward and northward to the German and Dutch frontiers, and westward as far as Brabant, the farming folk, with their bright and prosperous villages, were pursuing their customary avocations. And to the south the lovely Ardennes country, with its high hills and winding valleys, on and in which were fine residences and charming holiday resorts, basked in the summer sunshine.

Then came the tide of invasion like a great avalanche. Hills and valleys resounded with the thunder of guns. The great line of forts all around the city belched forth their fires against the masses of men trying in vain to battle their way through. Death and destruction, cries of the wounded and stricken, trampled fields and burning farmsteads, watercourses running with blood, and terrified cattle, made an inferno of what had before been a paradise. Inside the city the people, fearful yet brave, could only watch and wait the end of it all. Such is war in these days of huge armies and powerful weapons. What is most saddening of all is that the Belgians, who were outside the international rivalries that have led to this titanic conflict, have been the first to suffer by reason of their geographical position.

Poultry-breeding has always been a favourite pursuit in this section of Belgium, as, in fact, it is in almost every part of that country. Fanciers abound in and around Liège, more especially among private residents and the artisan population, many of whom are also keen pigeon and

rabbit breeders. The annual exhibition held at this centre is one of the most important in Belgium, only second to that at Brussels. This has been promoted by the society known as "L'Union Avicole de Liège," of which we extract the following particulars from Mr. Edward Brown's "Report on the Poultry Industry in Belgium," which should be studied by everyone at this time :

One of the most enterprising of the local or district societies is that at Liège, which has as its President M. Braconnier, whom I had met previously at Madrid, and whose beautiful château at Modave, in the Ardennes, I had the pleasure of visiting. It is a large, powerful body with 900 members. At its headquarters is a fairly good library and museum. It has a veterinary surgeon who treats sick birds and makes investigations on behalf of its members. It receives no subsidy, but is liberally supported by subscriptions, and holds a large annual show. I am indebted to Mons. C. Wauters, the secretary, for much information as to the work of this excellent society, which may be divided as follows : (1) Practical experiments upon a scientific basis, which are conducted under the supervision of the society, and the results compared and published. (2) Education, both by means of the library and lectures. (3) Publication of a weekly journal, which is sent post free to members who subscribe 5 francs per annum. This paper gives original articles and extracts from foreign publications. (4) Excursions of the members to visit practical and other poultry establishments in being.

Between Liège and the German frontier, a distance of twenty miles, is a high tableland known as the Herve country, which is a great poultry district. In spite of the elevation, averaging 950 feet above sea-level, and that it is very cold in winter, it is one of the most fertile areas in Belgium. The land is entirely pasture, and there the finest butter and cheese are produced. It is also a great apple district, and the poultry industry has been greatly developed. Again we quote from Mr. Brown's report :

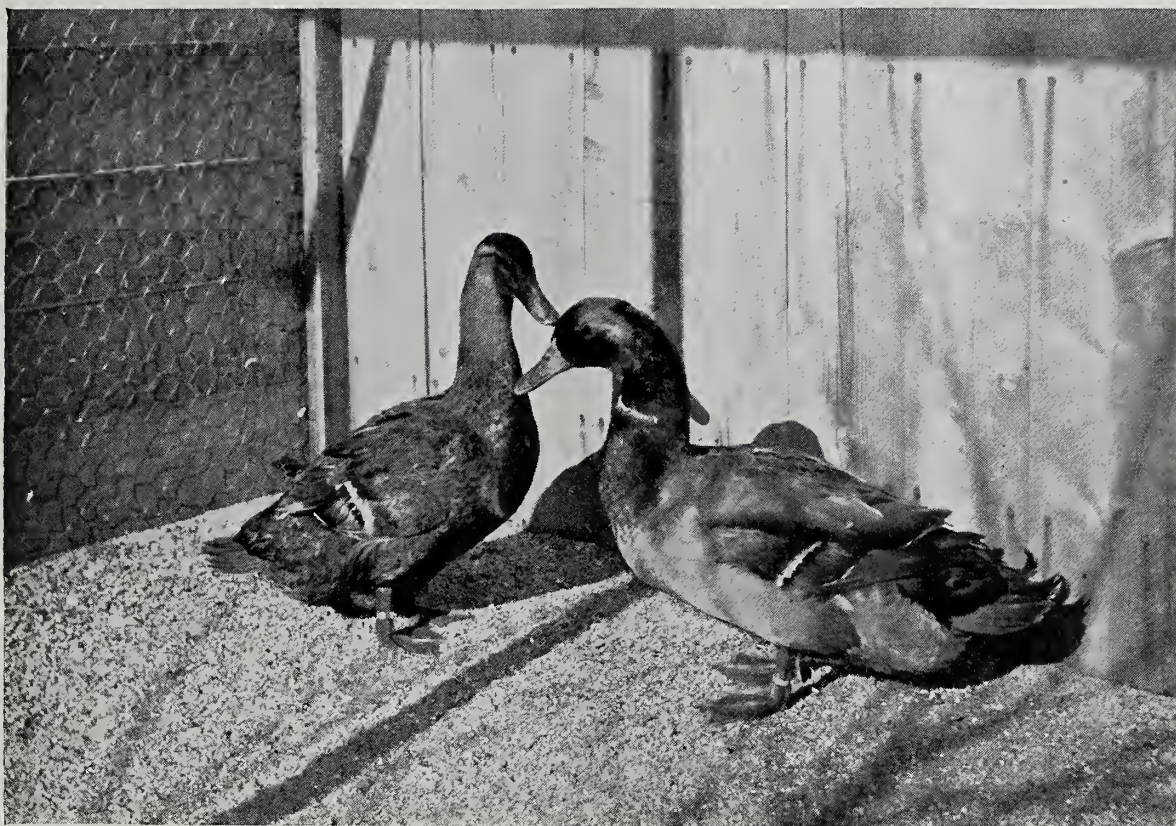
Whilst it is true that the farms in this part of Belgium are as a rule small, they are perhaps a little above the average in size, though this is arrived at more by observation during my two visits to the Hervé

country than actual statistics. Until a few years ago poultry were kept mainly for domestic purposes, but there has been a large increase, and upon industrial lines, within the last five years. Now they are to be seen upon almost every farm, frequently in considerable numbers. The general rule is that 60 to 100 laying hens are maintained, either around the home-stead or in the orchards. These figures may be taken to represent the minimum, for 300 to 500 are by no means uncommon, and in one case a larger farmer has 1,000 head. I saw more separate poultry-houses in the Hervé district than in the whole of the rest of Belgium, and it can fairly be anticipated that this

which is below those produced in Flanders. There is a breed peculiar to this district, known as the Hervé and efforts are being made to improve and popularise it. The Braekel and Campine fowls are too delicate, and the Malines fowl suffers from rheumatism on this heavy soil.

Poultry Packing.

One of the largest New York firms has adopted the plan of packing poultry in individual cardboard boxes. Large birds are packed singly, smaller ones two in each box.



A PAIR OF DANISH ROUEN DUCKS.

[Copyright.]

system will extend rapidly, in order that the birds may be scattered over the land, which is desirable if tainted soil is to be avoided. With respect to outbreaks of diphtheritis, referred to below, and from which this district has suffered to a considerable extent, I feel confident that the cause is to be found in the over-manuring of the soil and insufficient distribution of the fowls over the land. So far as I could learn, the poultry does not affect the cows in any way, and dairying and egg production can be conducted together. It may be hoped that as separate houses are erected the open-front system may be tried even upon this exposed tableland. The methods of management adopted are, on the whole, very good, as the people here are progressive and intelligent. The majority of the fowls kept are Leghorns, which thrive excellently and give good results. Where care is taken these birds lay fairly well in winter, and it is stated that, by selection, in four years the average weight of eggs produced in the district has been increased by 8 gm. (rather more than $\frac{1}{4}$ oz.) The average weight is from 50 to 60 gm. ($1\frac{7}{8}$ oz. to $2\frac{1}{8}$ oz.),

Chinese Eggs.

The Flowery Land commenced sending poultry to Britain two years ago. Now eggs are being shipped from China to the Western States of America, it is said, in considerable quantities.

Fattening a Million Chickens.

It is stated that the Carrollton Produce Company, of Carrollton, in the State of Missouri, fattens a million chickens a year. The figures are very round, but evidently a big trade is done.

Chickens as Gold Prospectors.

On a farm in California nuggets of gold were found in the crops of thirty chickens killed, from which it is believed the soil contains elements more valuable than for grit purposes. As a result, gold is being sought for, and chickens have been slaughtered in large numbers.

POULTRY INSTRUCTION AND ORGANISATION.

SELECTIONS AND REVIEWS.

Economy in Feeding.

We are all too generous in feeding our animals—ourselves included. A famous surgeon once said that ninety-nine out of every hundred patients would not have consulted him had they not eaten too much. On this point, in relation to the war, *Feathered Life* says:

Now is the time to study economy and practise it. In no direction may a greater general saving be effected than in the prevention of waste. Speaking of the industry as a whole, it is not too much to say that the cost of production could be reduced to a quite unexpected extent by the exercise of no more than reasonable care in feeding. In very many cases the waste due to carelessness is appalling, and is of itself quite sufficient to turn any possible gain into certain loss, whilst it is probable that there are very few poultry-keepers who could not find means to counteract—to some extent—the rising cost of feeding. This is not to suggest that fowls should be put on short commons to the extent of putting them out of profit. That is not economy. But those who know most about foods and their feeding value will be in the best position to cope with the exigencies of the moment. There is, however, no reason at all why any should be wasteful, and even those who have an imperfect knowledge of quality can at least be careful of quantity without being parsimonious. It is in such times as the present that our weaknesses are revealed, and in the matter of feeding the generality of poultry-keepers have a great deal to learn. Overfeeding is, perhaps, the most common fault of management, as it is the most profit-losing. This is no time to scatter food without due regard to the requirements of the stock and the insistent demands of economy. On the contrary, the cost of production must be minimised by all legitimate means; but it is imperative to maintain a productive condition.

Use of Brewers' Grains.

Reduction of cost in feeding poultry is a prime necessity. It may be that war time will have a great influence in this direction, which will be to the good. In *Eggs* the following suggestions are made as to brewers' grains:

Our next step, if we want something cheap for the birds to eat, is to visit the nearest brewery in the district. They always have brewers' grains for sale, and they are usually sold at 4d. to 6d. per bushel. In the winter time it is a difficult matter ever to get hold of them, as the farmer captures the whole of these for feeding his cattle. At this time of the year, while there is abundance of grass, the farmers do not need them, and our advice is to buy in a good supply. Press them to get all the moisture out that you possibly can and procure some large tubs or empty barrels and pack them as tightly as ever they can be packed with brewers' grains. They should be rammed really tight—and it will need a good deal of manual labour to do this and a long time—the tighter they are packed the better they will keep. After they are properly packed,

well ram and cover over on the top with a sack and a dozen shovelfuls of soil to prevent air from entering these grains and they will keep three or six months. Do not salt them in as this does nothing in the way of preserving them and practically ruins them for feeding purposes. Then day by day, as you require them for feeding, take out your supply and cover them up again. An inch on the top on opening a barrel may be spoilt. You can afford to lose that, but use all the fresh grains that you can for present needs.

How Ladies Can Help in War Time.

Influence and example can at the present time do much. We need the efforts of all to meet the conditions under which we are at present living. The *Morning Post* makes the following suggestions to ladies with respect to poultry development:

At the present juncture, when so many men are engaged in duties involved by war conditions, ladies can render an equal service in developing our food resources, among which eggs and poultry occupy an important place, due to the cutting off of the major part of imported supplies. Three leading points need to be emphasised—namely: (1) That poultry-keeping is an individual business in which the personal factor is supreme; (2) that the country will alone be adequately supplied by extension of production on each farm or holding or allotment, and not by establishment of big plants, though the latter may help to some small degree; and (3) that whilst larger farmers can greatly increase their output of eggs and poultry, the most speedy results will be attained by such smaller occupiers as are able to give personal attention to the birds.

In every district throughout the entire country immediate action is desirable. At the outset ladies willing to undertake this work should seek to understand the position of those whom they wish to serve. To the last-named it is and must be a question of profit. Therefore simplicity is an essential factor. Unnecessary expense for stock or appliances or complications in management must be avoided, and extension beyond the power of efficient control should be checked. The last-named is a danger at the present time. In many cases poultry plants run by ladies for their own pleasure have failed to exert influence for good by reason of the fact that these are not models which can be profitably reproduced. Such establishments will prove of great value if used in the manner suggested below, and not held up as examples to be copied, which would be fatal. One most important point is to suggest methods in which the use of wire-netting will be avoided. The primary step to be taken by ladies desirous of developing poultry-keeping within their respective spheres of influence is to see how far that can be carried out on their own land. There are many places used for ornamental purposes which for the time being could be thus occupied.

Increased Chicken Rearing.

Poultry as well as eggs should be produced in greater quantity, to which end every opportunity must be

taken for development. Mr. J. W. Hurst, writing in the *Field*, says :

In this matter the committee of the Sussex Poultry Club have set a good and useful example to similar associations of poultry-keepers throughout the country. At a meeting held last week in Lewes it was decided to make a public appeal to breeders, asking them to retain all pullets suitable for egg-production, and to make a subsequent selection of those most fit for mating, increasing as far as possible the output of table chickens in the spring. It is not now anticipated that the cost of foodstuffs will be as excessive as was at first thought probable, and it is not reasonable to suppose that it will in any case be so disproportionate to the value of the produce as to make production unremunerative. On the contrary, there is every indication that it will pay both commercial and private producers to breed and rear more table-poultry during the coming season.

Those who include chicken rearing in their ordinary routine of poultry-keeping operations will know best how to proceed, but the novice and the amateur, who perhaps rears no more than a brood or two at a seasonable period, may be in some doubt as to the best course to pursue. To make any very appreciable difference in the early output of table-poultry, hatching operations must perforce be spread over the months that are naturally unseasonable and to some extent unfavourable. Incubators must therefore be used to a much greater extent than is usual where production is not carried on upon commercial lines, because not only

are broody hens scarce at the time they will be most required, but in any case there will be need for a considerable augmentation of the natural means of incubation. It consequently follows that artificial brooding must be adopted to a corresponding extent, but those who are at all unfamiliar with these hatching and rearing appliances, or inexperienced in their operation, would be well advised to use small machines, and not to attempt large schemes of production. The greatest benefit will accrue from a general increase of production upon a relatively small individual basis, and if every present producer increases the normal output to no greater extent than is well within his or her capabilities, the aggregate increase will be astonishing to those who do not realise the possibilities. That this is the line of least resistance is obvious, and progress in this direction is more assured than in any attempt to use the present exigencies as a specious argument for attempting more wholesale systems of production.

Meanwhile it is incumbent upon all who keep fowls to select the birds that are best suited for breeding purposes, and to feed and generally manage the selected pens with a view to the production and maintenance of a good breeding condition at the desired period, rather than to encourage prolificness throughout the flocks regardless of the coming necessity for vigour and stamina at the time of mating.

Are Chicken Pox and Roup Identical?

Messrs. Hadley and Beach, writing in the Proceedings of the American Veterinary Medical Association,



A TYPICAL BROWN LEGHORN PULLET.

[Copyright.]

as quoted in the *Experiment Station Record*, suggest that the two diseases referred to above are the same, though assuming different forms :

Chicken pox and roup are believed to be the same disease manifesting itself in different forms. Repeated success was attained in transmitting the disease by subcutaneous inoculation of a few drops of a normal salt solution of the virus made by macerating the comb and wattle tissue from birds showing well-marked lesions of sore head, although the disease could not be produced by this method every time.

The incubation period varied from 3 to 20 days, and diphtheritic membranes frequently appeared on the nasal, oral, and conjunctival surfaces when the virus was placed on them or injected subcutaneously. The involved epithelium of the comb showed an increase in the size of the epithelial cells, which appeared to contain inclusions and inflammatory changes in the deeper layers.

In the treatment of the disease autogenous vaccines gave very satisfactory results. "Best results were obtained by two doses. The vaccine is especially applicable in large commercial and valuable breeding flocks when used before pathological changes become marked. The vaccination treatment for chicken pox was most valuable when used as a preventive, where it was effective in fully 98 per cent. of the cases. One attack conferred immunity. The immunity which resulted from the vaccination is estimated to be effective for $1\frac{1}{2}$ to 2 years.

"It was found impossible to transmit the disease at every attempt, due to certain peculiarities of the virus and the fowls. When the attempts were successful the disease ran a benign course, as it also did in the few cases in which it made an appearance after vaccination. Experiments to show that chicken pox is caused by a filterable virus resulted negatively.

"Although the identity of chicken pox and roup has not been definitely proved, the similarity of these diseases is so great that it seems possible to control roup by vaccination."

A Question of Egg-Shells.

An investigation as to whether the male parent influences the shells of eggs has been made by a German scientist, and is recorded in the *Monthly Bulletin of the International Institute of Agriculture*. More than 130 eggs were tested, laid by 13 hens, some with cocks of their own breed, and some with cocks of four different breeds, a few of which were Bantams. The results are stated as follows :

All dwarf hens were reckoned as belonging to the same race, in view of the difference in weight between them and those of medium size. All the hens were first mated with cocks of their own breed; then the cock was removed, and an interval of 8 or 10 days was allowed to elapse before he was replaced by a cock of another breed.

All eggs laid during the first mating period and subsequent isolation are reckoned as pure, while crossed eggs are those laid after the tenth day of the presence of the cock of another breed. Between the removal of the first cock and the time when the second cock's influence began to be felt, a space of time elapsed which the experiment showed to be long

enough to make sure that the influence of the first cock had entirely disappeared. The eggs were weighed and measured, and their colour and gloss noted as soon as possible after they were laid, and particulars were only kept of those eggs which proved fertile on incubation.

The results may be summarised as follows: The fact of the cock belonging to a different breed had no influence upon either the weight, shape, colour, or gloss of the eggs. The writer therefore casts some doubt on the recent assertions of Holdefliess and Tschermak, in which those writers allege that they have observed in eggs phenomena indicating telephony.

Abnormal Egg Prices.

Many warnings have been uttered against forcing up the prices of eggs. The result of the August panic, owing to the outbreak of the great European conflict, has checked consumption on all sides. It is of interest, therefore, to see in the *New Zealand Poultry Journal* some observations written before there was any idea of a European war :

For years we have argued that a high winter price is ruinous to us and lowers our yearly average. This winter others have been converted to our way of thinking by stern facts and practical demonstrations. Eggs should not exceed 2s. a dozen in winter, and producers are unwise to demand more. The consumption continues almost unabated while we keep the prices 1s. 9d. or 1s. 10d., but the moment we grab at the dreaded 2s. 6d. we overstep the mark and are paid back in our own coin. Why this grabbing policy? It is because producers do not consider the effects. They see only the few shillings on a few dozen eggs and are blind to the lowering price when supplies are plentiful. Agents are spurred on to eclipse each other in raising the price. A few dozens at an auction touch 2s. 6d., and it is blazoned abroad in the papers and so frightens consumers off eggs. The following week there is less demand and less buyers, and the following week more eggs and less buyers, and down the price goes, and we have seen it drop 9d. a dozen in a fortnight. Is this what we call common-sense marketing? It is more like juggling, and poultrymen lose thousands of pounds each year by the method. The public, once frightened, take some time to come back again, and as the producers increase their supply each week, instead of enjoying 1s. 8d. to 1s. 10d. for months, they promptly have to accept 1s. 3d. and 1s. 4d., and too soon they reach 10d. and 11d. a dozen. What encouragement for an import trade when we advertise 2s. 6d. a dozen for eggs! What an opening for public agitation to take off the duty and let eggs come in free! The imports are as yet small, but we shall be largely to blame if we encourage eggs coming in larger quantities by our high prices. Even though there has been a good demand for eggs this winter, there has been a good supply, and we have not seen a week go by that we could not fill an order for 1,000 dozen fresh eggs.

Curing a Cat of Chicken Eating.

If a cat catches chickens, tie one of her victims about her neck. Fasten it securely, for she will make incredible efforts to get rid of it. Be firm, and the cat is cured, and will never again desire to touch a chicken or bird.

BOOKS AND PUBLICATIONS RECEIVED.

WILL HOOLEY'S PRACTICAL POULTRY CULTURE. London : The Poultry Press, 156 pp., 2s. 6d. net, illustrated.

Several special features mark this little work, one of which is formed by the excellent tabular arrangement, presenting in a convenient form information which is very useful indeed, more especially to learners. As examples may be mentioned that on page 14 on "Soil in Relation to Breeds" and the four-page sheet showing "Nine Characteristics of Some Popular Breeds," both of which are excellent, even though in one or two points the divisions may be questioned. Such graphic teaching is to be commended wherever it can be adopted. Although there is throughout an evident tendency towards the exhibition or amateur poultry-keeper and a clearer grasp of their requirements than the farmer or large operator, these classes are important and need guidance just as much as do others. One fact is evident—namely, that the author has wisely avoided extremes and does not exaggerate. In fact, he is cautious, as evidenced by the observation that the intensive system "has not had a sufficiently long trial for anyone to express a decided opinion on it." Taken as a whole, this is a book upon which Mr. Hooley may be congratulated.

HOW TO MAKE MONEY FROM POULTRY. By W. Powell Owen. London : The Poultry Press, Ltd., 115 pp., 6d. net, illustrated.

A second edition of this handbook has been issued. It is confessedly simple, and does not attempt to deal with the more advanced operations. Under such conditions omissions are as numerous as the inclusions. There is much, however, of a useful nature, and the concise recommendations will be acceptable to many readers. One surprising point is that branches of poultry farming named—that is, (1) eggs, (2) table birds, and (3) exhibition stock—omits altogether the breeding of utility stock, which is so essentially the chief stand-by of the specialist.

POULTRY COLONIES ON FARMS. Special Leaflet No. 14.

These have been issued with commendable promptitude by the Board of Agriculture and Fisheries to meet the present condition of affairs and to encourage that advance in production at home so urgently required. It would be desirable if everyone would obtain a supply from 4, Whitehall Place, London, S.W., and distribute among those whom they are destined to serve.

SUGGESTIONS TO ALLOTMENT HOLDERS FOR AUTUMN TREATMENT OF LAND. Special Leaflet No. 1, 6 pp.

NOTES ON POULTRY FEEDING. Special Leaflet No. 2, 4 pp.

POULTRY ON ALLOTMENTS AND GARDEN PLOTS. Special Leaflet No. 3, 6 pp.

POULTRY AS FARM STOCK. Special Leaflet No. 4, 6 pp.

THE UTILISATION OF CEREAL OFFALS AND CERTAIN OTHER PRODUCTS FOR FEEDING PURPOSES. Special Leaflet No. 8, 6 pp.

NOTES ON THE PURCHASE AND PREPARATION OF FOOD FOR POULTRY IN GARDENS AND ALLOTMENTS. Special Leaflet No. 12.

MARKETING OF EGGS. Special Leaflet No. 13.

AGRICULTURAL STATISTICS OF IRELAND, 1913. Dublin : H.M.'s Stationery Office, Cd. 7479, 146 pp., 9d.

These statistics are, as is usual, very complete. Not only are records given of stock, including poultry, in the provinces and counties, but also the Poor Law Unions, discriminating between old and young birds. In these respects they are much fuller than the British figures. For instance, in the 1908 poultry census only divisions and not even counties were given. As previously stated, the total of 1913 was slightly in excess of 1912.

TWENTY-NINTH ANNUAL REPORT OF THE MAINE AGRICULTURAL EXPERIMENT STATION. Orono, Maine, U.S.A.

This embodies various Bulletins to which separate references have already been made.

Too much information cannot be published respecting the feeding of poultry. This brochure embodies much of our knowledge as to feeding higher-class stock in the hands of specialists. Probably it was written prior to the outbreak of war, or more might have been said as to cheaper classes of food and to the value of bran.

THE INTENSIVE SYSTEM OF POULTRY-KEEPING. By W. Powell-Owen. London : The Poultry Press, Ltd., 42 pp., 6d. net, illustrated.

As a description of what the intensive system is this is a capital little brochure. It states plainly the claims made for that method, but wisely omits definite commitment as to its permanency or profitability, which form the final test. Till that point is settled the "bread and butter" poultryman will be well advised to "wait and see."

RETURN OF PRICES OF CROPS, LIVE STOCK, AND OTHER IRISH AGRICULTURAL PRODUCE, 1913. Dublin : H.M.'s Stationery Office, Cd. 7503, 80 pp., 1s. Diagrams.

In these are given quantities and prices of eggs sold. The average value per gt. hd. in 1913 was 9s. 5½d., 2d. over the previous year, and the highest on record. In 1897 the average was 6s. 1d., so that the increased price in 16 years is more than 50 per cent.

THE A B C OF BREEDING POULTRY FOR EXHIBITION, EGG-PRODUCTION, AND TABLE PURPOSES. By W. Powell-Owen. London : The Poultry Press Limited, 70 pp., illustrated, 1s. net.

The various branches named in the title are separately dealt with in a clear and concise manner, and will be found very useful by the many who are taking up poultry-keeping, more especially with exhibition in view.

THE AVAILABILITY OF THE NITROGEN OF COTTON-SEED MEAL AND BEEF SCRAP FOR CHICKS. By B. L. Hartwell and R. A. Lichtenthaler. Bulletin 156 of the Agricultural Experiment Station of the Rhode Island State College, Kingston, R.I., U.S.A., 66 pp.

Acknowledgment can only now be made of this Bulletin, which is left over for further consideration.

HEALTHY POULTRY. By Cecil L. Byrne. Thorncliffe, near Sheffield : Newton Chambers and Co., 63 pp., free.

A useful little manual, containing many valuable hints, more especially in respect to hygiene, issued by the makers of the well-known disinfectant "Izal," which is one of the best sanitary preparations on the market.

REPORTS OF EXPERIMENTAL FARMS IN DOMINION OF CANADA, 1913. Ottawa : Department of Agriculture.

Contains reports of the various stations, and special articles on Preservation of Eggs, by F. T. Shutt, M.A.; Blackhead in Turkeys and Tuberculosis in Poultry, by C. H. Higgins, B.S., D.V.S.

IMPORTS AND EXPORTS OF AGRICULTURAL PRODUCE, 1913. Part IV. of the Agricultural Statistics. London : H.M.'s Stationery Office, Cd. 7551, 98 pp., 5½d.

Gives in detail the various figures. The average imports of eggs were 56 per head of the population.

REPORT OF THE DEPARTMENT OF AGRICULTURE FOR SOUTH AUSTRALIA FOR 1912-1913. Adelaide : R. E. E. Rogers. 74 pp., illustrated.

Contains Mr. Laurie's annual statement, which is always good reading.

- STUDIES ON INHERITANCE IN PIGEONS. I. Hereditary Relations of the Principal Colours. By Leon J. Cole. Bulletin 158 of the Agricultural Experiment Station of the Rhode Island College, Kingston, R.I., U.S.A. 72 pp., illustrated.
- MONTHLY BULLETIN OF AGRICULTURAL INTELLIGENCE AND PLANT DISEASES. Rome: International Institute of Agriculture. Year V., No. 7, July, 1914. Index No., 1913; Year V., No. 8, August, 1914.
- MONTHLY BULLETIN OF ECONOMIC AND SOCIAL INTELLIGENCE. Rome: International Institute of Agriculture. Vol. 43, No. 7, July, 1914; No. 8, August, 1914; No. 9, September, 1914.
- JOURNAL OF THE DEPARTMENT OF AGRICULTURE AND TECHNICAL EDUCATION FOR IRELAND. Vol. XIV., No. 4, July, 1914; October, 1914. Dublin: H.M.'s Stationery Office.
- STUDIES ON FOWL CHOLERA. Part IV. By P. B. Hadley. Bulletin 159 of the Rhode Island Agricultural Experiment Station, Kingston, R.I., U.S.A., 21 pp.
- HOW TO FEED HENS FOR EGG-PRODUCTION. By W. Powell-Owen. London: The Poultry Press, Limited, 59 pp., 1s. net.
- THE AGRICULTURAL JOURNAL OF THE UNION OF SOUTH AFRICA. Pretoria, Transvaal. Vol. VIII., No. 1, July, 1914.
- EXPERIMENT STATION RECORD. Washington, D.C., U.S.A., Dept. of Agriculture. Vol. XXX., No. 8, June, 1914.

CURRENT POULTRY LITERATURE.

(Mention is here made of special articles appearing in home and foreign publications dealing with poultry-keeping in its various branches.)

- JOURNAL OF THE BOARD OF AGRICULTURE. London: 4, Whitehall Place.
The Control of Air Currents in Poultry Houses and Brooders, by Major P. H. Falkner, August, 1914, *illustrated*.
Notes on Poultry Feeding, September, 1914.
Poultry on Allotments and Garden Plots, September, 1914.
Poultry as Farm Stock, September, 1914.
Poultry Colonies on Farms, by Edward Brown, October, 1914.
Notes on the Purchase and Preparation of Food for Poultry in Allotments and Gardens, October, 1914.
Marketing of Eggs, by Edward Brown, November, 1914.
- JOURNAL OF THE DEPARTMENT OF AGRICULTURE FOR IRELAND. Dublin: E. Ponsonby.
Second Irish Laying Competition, by Miss L. Murphy, October, 1914.
- AGRICULTURAL GAZETTE OF NEW SOUTH WALES. Sydney: W. A. Gullick.
Rearing and Management of Chickens, by J. Haddington, June, 1914.
- ABERDEEN FREE PRESS. Aberdeen: Alex. Marr.
Poultry on an Aberdeenshire Small Holding, November 20, 1914.
- AGRICULTURAL GAZETTE. London: Vinton and Co., Ltd.
Distemper in Chickens, by A. T. J., October 19, 1914.
- BAZAAR, EXCHANGE, AND MART. London: Drury Lane, W.C.
The Black Minorca, by X. X. X., August 5, 1914.
- DAILY CHRONICLE. London: Fleet Street, E.C.
Poultry-Keeping for Soldiers' Wives, by Edward Brown, F.L.S., September 17, 1914.
- COUNTRY GENTLEMAN. Philadelphia, Pa., U.S.A.
Electricity for Chickens, by Edward Brown, September 5, 1914, *illustrated*.
Canned Eggs, by A. A. Coult, September 19, 1914, *illustrated*.
Hen that Cuts the Meat Bill, by C. L. Opperman, October 17, 1914, *illustrated*.
Mechanical Alarms for Hen Houses, by S. F. Aaron, October 24, 1914, *illustrated*.
Turkeys in Tennessee, by F. R. Miller, October 31, 1914, *illustrated*.
- DEWSBURY REPORTER. Dewsbury, Yorks.
Laying Breeds of Fowls, by F. W. Parton, August 1, 1914.
- EGGS. Poole: Randolph Meech.
Poultry Food Supply in Time of War, August 12, 1914.
Rise and Fall of a Laying Strain, by Oscar Smart, August 19, 1914.
- Acorns for Poultry, by W. Vale, F.Z.S., October 14, 1914.
- FARM AND HOME. London: 63, Lincoln's Inn Fields.
Houses and Housing, by E. T. Brown, August 19, 1914, *illustrated*.
Making a Modern Poultry House, by H. Mace, September 30, 1914, *illustrated*.
Economies in the Poultry Yard, by E. T. Brown, November 25, 1914.
- FARMER AND STOCKBREEDER. London: Essex Street, W.C.
A Useful Hopper Feeder, by G. A. Palmer, August 10, 1914, *illustrated*.
Oviduct Troubles, by G. A. Palmer, August 17, 1914.
The Aims of Farm Poultry-Keeping, by G. A. Palmer, September 7, 1914.
Choice of a Cockerel, by G. A. Palmer, November 23, 1914.
- FEATHERED LIFE. London: 5, Fetter Lane, E.C.
Caponising, September 23, 1914, *illustrated*.
Freedom v. Confinement, October 14, 1914.
- FEATHERED WORLD. London: 5, Arundel Street, W.C.
The Sacred Fox, by Edward Brown, F.L.S., August 14, 1914.
Poultry-Keepers' Prospects, by "Rightabout," August 21, 1914.
Low Fertility and High Vitality, by Edward Brown, F.L.S., August 28, 1914.
Economy in Feeding, by "Rightabout," September 11, 1914.
District Developments, by Edward Brown, F.L.S., September 13, 1914.
Feeding Value of Bran, by "Rightabout," October 16, 1914.
The National Capacity, by Edward Brown, F.L.S., October 23, 1914.
Housing and Penalty of Immobility, by Edward Brown, F.L.S., November 13, 1914.
Economy in Poultry Feeding, by R. E. Steed, November 20, 1914.
- THE FIELD. London: Bream's Buildings, W.C.
The Future Chicken Supply, by J. W. Hurst, August 22, 1914.
Emergency Measures, by J. W. Hurst, August 29, 1914.
The Use of Incubators, by J. W. Hurst, October 10, 1914.
Large v. Small Flocks, by J. W. Hurst, October 31, 1914.
Table Poultry Production, by J. W. Hurst, November 7, 1914.
Poultry Farming, by J. W. Hurst, November 28, 1914.

THE GLOBE. London : 367, Strand, W.C.
Eggs and Poultry : Where Our Supplies Came From, August 8, 1914.

LAND AGENTS' RECORD. London : 149, Strand, W.C.
The Poultry Industry, September 26, 1914.

MORNING POST. London : Aldwych, W.C.
Poultry Development : How Ladies Can Help, August 26, 1914.

NOTTINGHAM GUARDIAN. Nottingham : T. Forman and Son.
Need of Increased Home Supply, August 18, 1914.

POULTRY. London : 10, Essex Street, W.C.
How to Rear Poultry and Grow Vegetables and Grain, September 4, 1914, *illustrated*.
Notes on Feeding Fowls, by an Old Poultry-Keeper, September 18, 1914.
Fruit Growers and Poultry, September 25, 1914.
Co-operative Poultry Farming, by F. A. Hunt, October 3, 1914, and November 6, 1914.
A Lean-To Poultry House, by A. C. Horth, October 23, 1914, *diagrams*.

Mating Up the Breeding Pens, by E. T. Brown, October 3, 1914.

Slipshod Marketing Methods and the Egg Boom, by E. T. Brown, October 10, 1914.

Give the Poultry Their Proper Place, by G. A. Palmer, October 31, 1914.

The Poultry Small-Holding, by E. T. Brown, November 14, 1914, *et seq.*

THE STANDARD. London : Shoe Lane, E.C.
Poultry and Rent Paying, September 26, 1914.

WORLD'S WORK. London : W. Heinemann.
The Food That War Cannot Touch, by "Home Counties," October, 1914.

YORKSHIRE POST. Leeds : Albion Street.
The War and the Poultry Yard, September 21, 1914.

CANADIAN POULTRY REVIEW. Toronto, Canada.
Mineral Elements in Poultry Feeding, by M. A. Jull, August, 1914.
The Dressed Poultry Trade, by M. A. Jull, October, 1914.



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A MOVABLE BROODER WITH A MOVABLE RUN ATTACHED.
A capital plan for the chicken-raiser whose space is limited.

POULTRY WORLD. London : 154, Fleet Street, E.C.
The La Bresse as an All-Round Fowl, by Mrs. Ramsbottom, July 24, 1914.
Value of Stubble for Poultry, by J. A. Watson, July 31, 1914.

REFEREE. London : Tudor Street, E.C.
Fox-Hunting and Poultry Farmers, by Gareth, September 13, 1914.

THE SCOTS PICTORIAL. Edinburgh : 12, Banks Street.
Pig and Poultry Farming, July 25, 1914, *illustrated*.

THE SMALLHOLDER. London : Henrietta Street, W.C.
Egg Co-operation in Denmark, by E. T. Brown, August 1, 1914, *illustrated*.
How to Tell the Value of Your Fowls, by E. T. Brown, August 8, 1914, *illustrated*.
The Six-Fowl Man, by Bernard Finch, August 15, 1914, *illustrated*.
The Moulting Period, August 29, 1914.
How to Market Surplus Birds, by E. T. Brown, September 19, 1914.

NEW ZEALAND POULTRY JOURNAL. Christchurch, N.Z. : J. B. Merritt.
The Other Half of the Poultry Industry, by J. B. Merritt, June 20, 1914.
Poultry Culture as a School Subject, June 20, 1914.
Heavy Breeds v. Light Breeds (Discussion), August 20, 1914.
The White Scourge of Poultrydom, by the Editor, September 19, 1914.

STRAITS TIMES, Singapore.
Evaporation of Eggs, June 20, 1914.

FARM POULTRY. Boston, U.S.A. : 39, Sudbury Street.
Small Poultry Houses, September, 1914, *illustrated*.

RELIABLE POULTRY JOURNAL. Quincy, Ill., U.S.A.
Profitable Goose Farming, by J. J. Dunne, October, 1914, *illustrated*.

BAILY'S MAGAZINE OF SPORTS AND PASTIMES. London : Vinton and Co., Ltd.
Poultry Damage and What is Paid per Year, October, 1914.

COOKING CAPONS.

FOR a small family a capon will prove a decidedly more suitable bird than a turkey, and as the former can be cooked and served in precisely the same manner as the latter, it forms an excellent substitute. As regards the ordinary methods of preparation—namely, roasting or boiling—they are in all probability thoroughly understood by every housewife of any experience, but there are many other ways in which a capon can be treated, and these, or a few of them, I should like to mention. There are also several kinds of forcemeats which are not known nearly so well as they deserve to be, and these also are now given for the benefit of our readers.

CAPON EN CASSEROLE.

Choose a fine, large, plump bird, and, after preparing it in the usual manner, stuff it with any of the forcemeats given below, truss it firmly, and place it in a casserole or closely covered earthenware dish containing a small quantity of good white stock. Cook slowly and evenly until done enough, and be careful to baste the bird frequently during the process, adding a little more boiling stock if necessary. When sufficiently cooked, take up the capon, carefully remove all fastenings, then serve on a very hot dish, with a little rich white sauce pleasantly flavoured with oysters or mushrooms poured over it, and more sauce sent to table in a tureen as an accompaniment. The edge of the dish should be garnished with a plentiful supply of fresh parsley and slices or quarters of lemon.

STEWED CAPON.

Prepare the bird in the usual way for boiling, and after stuffing it with a suitable forcemeat (see below) truss it firmly and stew it as gently and evenly as possible in well-flavoured white stock. Meanwhile blanch and boil as for curry three-quarters of a pound of Patna rice. Then, when both bird and rice are ready, dish up as follows: Arrange the rice in a firm neat bed on a hot dish, and sprinkle it lightly with a mixture of very finely chopped parsley and lobster coral, then place the capon on top, either whole or cut up in neat joints and slices, and sprinkle it also in a similar manner. Garnish the edge of the dish with small forcemeat balls and quarters of hot hard-boiled eggs, and send the whole to table as hot as possible.

CREAMED CAPON.

Carefully remove every particle of meat from a cooked capon and pound it smoothly in a mortar, season pleasantly with salt, pepper, grated nutmeg, and strained lemon juice, moisten well with beaten eggs, pass the whole through a fine sieve and add a teacupful of fine breadcrumbs which have been thoroughly soaked in cream and mix well. Then put the preparation into small well-greased moulds, cover the tops with buttered paper, and steam gently over plenty of steadily boiling water until the creams are just nicely set. From twenty to thirty minutes will be required, according to the size of the moulds. When done enough, turn out the creams carefully on to a hot dish covered with a dish-paper or a neatly folded napkin, garnish with forcemeat balls, curled bacon, and sprigs of parsley, pour a small quantity of good white sauce over each cream, and send more sauce to table as an accompaniment. If a little finely minced parsley, mixed with the yolk of a hard-boiled egg

which has been rubbed through a sieve, is lightly sprinkled over the whole it forms a decided improvement to the appearance of the dish.

CAPON TO SERVE COLD.

This dish takes some time to prepare, but when nicely done it is so highly appreciated that one feels amply repaid for the labour entailed. Prepare the bird carefully, then divide it down the breast, cut off the wings and the neck, and remove the bones without in any way injuring the skin, after which lay it out quite flat on the table, skin downwards, and beat it very gently in order to acquire an even thickness. Cover it with a layer of forcemeat (see below), roll it up as tightly as possible, sew it firmly to prevent the contents escaping, and cover it entirely with slices of fat bacon cut very thin. When thus prepared, tie the roll securely in a cloth and simmer gently for about two hours in sufficient well-flavoured white stock to quite cover it. When done enough—the exact time, of course, to be regulated according to the size and age of the bird—place the roll between two dishes and put a weight on top. Next day remove the cloth and the bacon, carefully free the roll—or small galantine—from every particle of fat, and brush it over with two or three coats of liquid glaze, letting each coat dry before adding the next. Ornament tastefully with roughly chopped aspic jelly, boiled beetroot stamped out in small fanciful shapes, hard-boiled eggs cut in quarters or slices, and sprigs of fresh parsley, and serve.

SOME GOOD FORCEMEATS.

VEAL FORCEMEAT.

Put into a bowl ten ounces of fine breadcrumbs, eight ounces of finely chopped beef suet, a liberal seasoning of salt and pepper, two ounces of lean cooked ham either finely chopped or grated, two dessertspoonfuls of minced parsley, the strained juice of a fresh lemon, and three or four well-beaten eggs. Mix thoroughly, and use as required.

HERB FORCEMEAT.

To ten ounces of finely sifted breadcrumbs allow six ounces of chopped suet, a tablespoonful of mixed herb powder, a seasoning of salt, pepper, mace, and lemon juice, a tablespoonful of chopped parsley, and three or four perfectly fresh raw eggs. Put all the dry ingredients into a bowl, mix well, moisten with the eggs and lemon juice, and the forcemeat is ready for use.

MUSHROOM FORCEMEAT.

The ingredients required are half a pound of freshly gathered mushrooms, two ounces of butter, six ounces of fine breadcrumbs, a liberal seasoning of salt, pepper, mace, and lemon juice, a large tablespoonful of chopped parsley, and three or four well-beaten perfectly fresh eggs. Prepare the mushrooms in the usual way, then cut them up small, and put them into a stewpan with the butter, seasonings, and parsley, and fry them for a few minutes over a moderate heat, then remove the pan from the fire, add the breadcrumbs and the beaten eggs, and stir briskly until the various items are thoroughly blended. Then use as required.

PARSLEY AND ONION FORCEMEAT.

Peel six or eight large sound onions and blanch them in the usual way, then boil them in equal parts of milk and water until three-parts cooked, after which drain carefully. Put them in a bowl and chop them finely, add three ounces of fresh butter, six ounces of

breadcrumbs, salt, pepper, powdered sage, and lemon juice according to taste, and a tablespoonful of minced parsley, then mix well, and the forcemeat is ready for use.

POTATO FORCEMEAT.

Wash and peel some large sound potatoes and cut them into small pieces, then put them into a stewpan with two or three ounces of fresh butter, a tablespoonful each of chopped parsley and onion, and a seasoning of salt, pepper, and grated nutmeg. Cover closely and cook over a very slow fire until nearly done enough. Shake the pan every now and then to prevent the ingredients sticking to the bottom, but do not stir, as that would be liable to break the pieces of potato to a mash—a point to be carefully avoided. If desired, a small quantity of sausage meat or a few cold cooked sausages cut up small may be added to the other ingredients, but in either case this kind of forcemeat is exceedingly good and well worth a trial.

CHESTNUT FORCEMEAT.

Choose twenty large sound chestnuts, and, after roasting and peeling them, boil them in some good white stock for about twenty minutes. Then drain them, and when quite cold put them in a mortar with two tablespoonfuls of grated or very finely chopped ham, a seasoning of salt and pepper, a tablespoonful of minced onion, a teaspoonful of grated lemon rind, and four large tablespoonfuls of fine breadcrumbs, and pound the whole to a smooth paste, moistening it during the process with two ounces of slightly melted butter and three or four well-beaten fresh eggs. Mix thoroughly, and use as required.

FISH FORCEMEAT.

No. 1.—A very delicate and superior kind of forcemeat is prepared as follows: Put a large teacupful of freshly boiled shelled shrimps into a basin with half a pint of fine breadcrumbs, some pepper, mace, and a very small quantity of salt, two ounces of fresh butter, a tablespoonful of chopped parsley, and a dozen prime oysters which have been cut up small. Then mix well, moisten with the strained oyster liquor, bind with beaten eggs, and use. If oysters are considered too expensive or are difficult to obtain, prime cockles or mussels form a very good substitute. No. 2.—If a rather more economical forcemeat is preferred, the following will be found in every way satisfactory. Put into a mortar four ounces of cooked fresh fish which has been carefully freed from bones, skin, &c., and torn into tiny shreds, two ounces of freshly boiled shelled shrimps, four ounces of sifted breadcrumbs, a teaspoonful of anchovy essence, three ounces of finely shredded beef suet, and a seasoning to taste of salt, pepper, mixed herb powder, and lemon juice, and, after mixing well, moisten with beaten eggs, and use as required. Note.—If preferred or more convenient, the same weight of cooked lobster, crab, crayfish, &c., may be substituted for the shrimps, or the forcemeat may be composed of only one kind of fish; but, of course, a mixture of two or three kinds will always prove more dainty, the selection of the fish being entirely a matter of taste.

Alness Poultry Station.

The report of this station in Ross-shire for 1913-14 shows a good year's work. During the twelve months 336 sittings of eggs, 55 selected cockerels, and 70 hens and pullets have been distributed.

SCOTTISH NOTES.

B/ H. LAMMIE.

NOT for many years in Scotland has the autumn weather conditions continued so extremely favourable for the rural community. Week after week of happy sunshine has favoured all branches of agriculture, and with the exception of those high altitudes where oats seldom ripen, an average crop of grain has been safely gathered in.

This early harvest and subsequent mild weather has afforded the farmer an unusual opportunity of spreading his poultry out on the stubbles, where the fresh land and fallen grain gives the health and vigour necessary for satisfactory winter egg-production. In many districts commendable efforts to run the poultry over the stubble lands are being made by the more enterprising farmers, but unfortunately it cannot yet be said that these efforts are general. It is still possible to stand on some vantage-ground that commands hundreds of acres of stubbles and survey the whole district without seeing a single poultry-house. There are many agricultural districts where colony houses are unknown.

The advantages of this autumn distribution of poultry have not yet been adequately brought to the notice of Scotch agriculturists. It ought, however, to be pointed out that farmers are not equally blame-worthy for lack of enterprise and economy; foxes are a source of much loss and annoyance throughout the country. In some districts they make colony poultry-keeping almost impossible. The loss, along with the uncertainty and insufficiency of compensation, is undoubtedly largely responsible for the slow progress of colony poultry-keeping.

Still, amongst all these difficulties there are opportunities, and poultry improvements in various directions are quite evident. In no previous autumn has Scotland possessed such a large number of well-grown, pure-bred pullets suitable for winter egg-production. An improvement also is noticeable in feeding and general management. Many farmers and farm workers are beginning to see that fowls deserve the same intelligent consideration and attention as the other stock on the farm.

Immediately war was declared many foodstuffs rose to a prohibitive price; presently these dropped considerably, but most grains and meals are still a good bit above their usual value.

Eggs in most districts are in good demand and slightly higher than the usual November rates. Extraordinarily large quantities of unfatted fowls were rushed into the markets during August and September. This was caused, I presume, by the high price of foodstuffs and the fear of a national scarcity. Gradually the markets became glutted, and thousands of birds were sold at little more than half their value. Killing fowls are again in good demand in a rising market, and probably by Christmas prices will be higher than usual. The present, therefore, is an anxious time for the poultry farmer. The uncertainty of the markets and the general disorganisation of trade is felt in many ways. The high food prices are sending many farmers back to potatoes as the principal poultry food—just when education was beginning to bear fruit in a better and more balanced ration. Then a number of poultry-keepers are cutting down the rations to reduce the

expense, and, simultaneously, they are cutting down the production. The high price of material makes it impossible for the appliance makers to provide poultry houses at the old price, while the general cancelling of autumn and winter exhibitions has almost killed the demand for fancy birds and left the exhibitor with a depleted exchequer.

But while these facts force themselves upon us and demand consideration, it is well to remember that they are only temporary. Already there are signs of dawning victory, and behind it the coming of a better day. Meantime we should pursue our duties with quiet determination and prepare for the future.

The Scottish Board of Agriculture recommends increased activity and fresh endeavours amongst all poultry-keepers. The present regrettable conflict, with its attendant stagnation of trade, shows the vital need for home-produced foodstuffs. Scotland ought to produce within her own borders a large proportion of the poultry products which have hitherto been imported from the Continent.

It is impossible now to raise pullets that will become productive during the present season, but something ought to be done to prevent the slaughter of well-grown birds before they have become productive. Scotland annually imports large quantities of pullets from Ireland. These birds are bought by poulterers at a low price, shipped to Glasgow and other places in Scotland, where they are selected and a proportion of them sold to the Scottish peasantry.

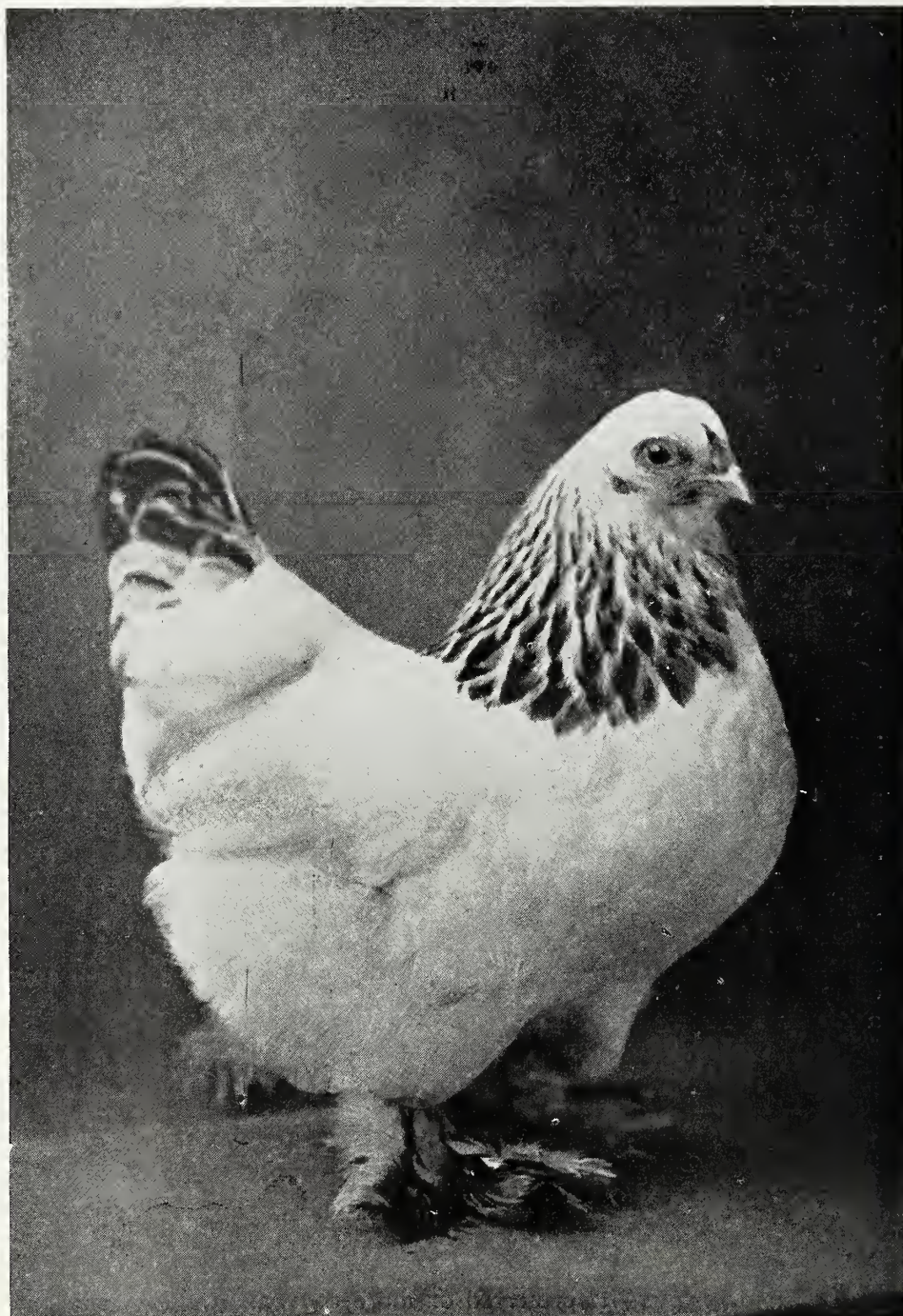
The Irish cross or mongrel pullet may not be the best kind of bird for profitable egg-production, but if these birds are wanted for productive purposes in this country, then they ought to come direct from the Irish peasant to the Scotch farmer.

Thousands of Irish pullets are annually distributed over the South and West of Scotland, all of which seem to pass through the poulterers' hands.

The dealer kills the best for table purposes, sells the worst at a handsome profit, and not infrequently sends them out from his unhealthy cellars carrying disease to the farmer's yard. If this trade is to continue it ought to be organised and the middleman eliminated. Scotch poultry-keepers would then get the best as well as the worst and be able to secure them at a smaller price and with much less risk of disease. This looks like a matter that might be of interest to the Poultry Department of the Scottish Agricultural Board.

Poultry Sheds.

It is strange that in countries where land is plentiful restriction of area for fowls appears to be common. An Australian exchange tells of the Redfern Poultry Farm in Victoria, where the layers are kept under cover all the time in sheds 150ft. long, divided into 10ft. compartments. These are open-fronted. The system is economical of wire-netting.



A LIGHT BRAHMA BANTAM PULLET. [Copyright.

Frozen Eggs.

South Africa and China are sending frozen eggs to this country in the hope of filling the gaps left as to Russian, Austro-Hungarian, and Italian supplies.

Development in County Durham.

The efforts of Miss Maidment and others have induced the Durham Education Committee to establish at Sherburn Hall a dairy and poultry station, at which instruction in both subjects is to be given to female students.

EGG AND POULTRY SUPPLIES IN WAR TIME.

THE following letters have been published widely in our daily contemporaries:

I. WHAT PRODUCERS SHOULD DO.

The outbreak of war cannot fail to result in a great shortage of eggs and poultry, due to the fact that so large a proportion of our imports came from Continental countries now at war, or those such as Italy, which have forwarded supplies through the area of conflict.

In 1913 out of egg imports in total value £9,590,602, 64 per cent. came from the nations referred to (£6,119,467), and of poultry imports with a total value of £955,238, 71 per cent. were derived thence (£679,051). The bulk of these will not be available so long as the war lasts, and, with the vast destruction of animal life that usually takes place, for some time afterwards.

As a result there must be a great rise in prices. In fact, that has taken place to some extent. This cannot fail to check consumption. Households will be wise to use fewer eggs and chickens, otherwise rates will become prohibitive.

An increase of home production in view of this urgency is imperative. I venture to suggest, therefore:

1. That producers should kill and market older hens and cockerels as speedily as possible, so as to get rid of useless eaters and provide a cheaper class of food;

2. That all earlier hatched pullets and yearling hens be retained as layers, either in the place of breeding or for sale to farmers and others;

3. That everyone in possession of an incubator should set it in operation as soon as eggs are obtainable for that purpose; and

4. That those producers who have preserved eggs on hand should not take these out of pickle too soon.

There are other suggestions which might be made. The above will serve for the present moment.

II. EXTENDED OPPORTUNITIES.

Large numbers of artisans in the manufacturing and mining districts produce eggs and chickens for supply of their own households. Not a few add materially to their ordinary wages by production for sale, in both directions contributing substantially to the food resources of the country.

In the near future it is probable that many of these

will be entirely or partially unemployed, owing to the war. It is desirable, therefore, to consider as a question of constructive policy whether opportunities could not be afforded in every part of the country, urban and rural, for extension on these lines.

The time of year is most favourable. Pullets are fast maturing and should soon begin to lay. These can now be bought at moderate prices. Three months later that will not be the case.

Farmers, country residents, and others should retain such pullets as are on hand. They would be rendering a national service by at once allocating a piece of land to every labourer and cottager upon which to grow vegetables and keep fowls, the former of which would feed the latter. They could also help materially by donating, or loaning, or selling at a low price birds for this purpose.

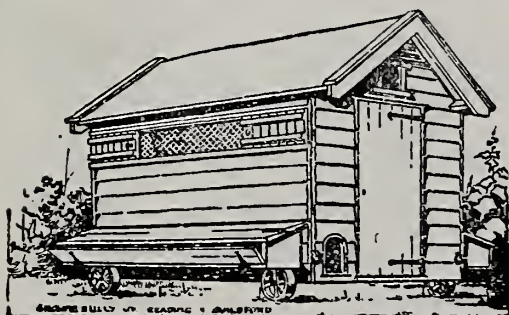
Adjacent to towns and manufacturing districts is frequently to be found land either unused or merely in grass. If this were offered to artisans at a low or nominal rental the opportunity would in many cases be seized with avidity. Thus the time at their disposal could be profitably employed. Moreover, railway embankments and sides could be so used. At least five million fowls might be maintained on what is now vacant or land very partially utilised.

III. MORE LAND FOR POULTRY.

Comments upon and communications respecting my letter of August 14 suggesting that opportunities should be afforded to poultry-keepers by provision of land reveal that the proposal has awakened a considerable amount of interest. I am glad to know that action in this direction has already been taken in one or more instances.

I suggest that wherever local societies are already in existence, whether of small-holders, co-operators, or others, these should at once take steps to secure land for poultry runs or complete occupation by poultry. In addition to areas either unused or partly cultivated, of which the large extent of railway borders are an example, there are parks, pleasure grounds, and the like, which could thus be turned to the service of the community as well as the benefit of individual members.

Where there are no such bodies available the course to be adopted is to form in each district or parish a special committee, which may continue for the war period or assume a permanent form. Isolated action is less likely to be successful than combined effort, either in obtaining land or attainment of the desired object—namely, a large increase in native supplies.



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SHELTER FOR LAYING STOCK.

AN important matter, and one that ought to be given attention to if winter eggs are to be plentiful, is the provision of shelter for the laying flocks in the field, but where, as is usually the case, stock are running over the same land, this is often no easy task, because sheep and cattle are very destructive of temporary erections, and the question of expense in erecting solid structures has to be considered. Perhaps the best way to meet the difficulty is to use hazel hurdles (such as those made by Hurdles, Limited, of Letchworth), securing these firmly to strong stakes driven into the ground, forming an enclosure within which the fowls can take scratching exercise and get ample shelter from cold winds and wet, yet plenty of fresh air. By using three hurdles for the back, two each for the sides, and two for the front, which should face due south (having the opening nearest the east side), a large number of fowls can find shelter. The roof can be constructed of similar hurdles laid flat and secured firmly to the sides. Strips of wood should be nailed across to prevent stripping by the wind.

The scratching material can be of dried leaves, as offering no temptation to cattle, and a few boards nailed at intervals across the opening will keep the material from being scratched out and stock from trying to enter, though the fowls can get through. Such a shelter costs little but the labour involved, which is not great, as hurdles are to be found on most farms, and no damage is done to them by use in this way. The same shelter turned to the north is equally useful for shade in the summer. A little corn thrown among the leaves will keep the fowls busy and warm

during the worst weather, rye being especially good for the purpose on account of its small size, but occasional grains of maize will do no harm and are eagerly hunted for by the fowls.

SIGNS OF PROGRESS.

A story is told of a certain hen wife in one of the more backward parts of Western Ireland which is so typical of the habits of mind of the more unawakened kind of farmer's wife that it bears re-telling. A visitor, unacquainted with the ways of the district and having her own standards of comfort and fitness, finding the rooms of this Western hen wife congested by the presence of hens, which (or should we not say who?) mistook the bedposts for roosting perches and the warm corners of the hearth for nesting places, remonstrated with the hen wife, who was, of course, the woman of the house, thus: "Is it not a wonder that you could not find somewhere else for the hens besides having them in the room with yourselves? Have you no stable or outhouse in which to keep them?" The hen wife knew a thing or two, and she knew, she concluded, the ways of hens better than her inquirer, and she answered in her most well-bred air: "Oh, musha, no, ma'am; but sure, the creatures, they content themselves." All that mattered from the hen wife's point of view was the comfort of the hens. She had got that far, at all events, and we are not sure that all our farm women get even so far as that!—*The Homestead.*

Scalded Chickens.

The practice of scalding poultry before plucking has almost died out in this country. It is of interest to note that recent investigations in America have shown that bacteria develop much more rapidly on a scalded than on a dry picked bird, and that the same is true when wet cooled as compared with dry cooled.

Rhode Island Red Cockerels

Price 10/6 and 15/- each.



THE MANAGER,
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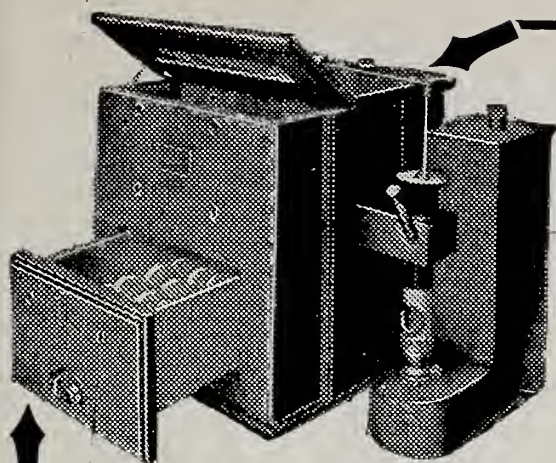
YOUR HEN'S NUMBER

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FEBRUARY.

THE GOLDEN EGGS

Eggs last winter were fetching a higher price than ever—the demand was a long way above the supply, and consequently the prices of eggs in some districts were fetching 3s. a dozen. All you needed were pullets to lay eggs at that time, and you would have netted big profits. Did you have them? Whether you did or not, it is certain you should have them next winter—the success of your business depends on it. If you are to do so, now is the time to hatch them. These birds will in November give you the “golden eggs”—money-making eggs.

You cannot rely on broody hens for good hatching results; they break too many eggs; kill too many chicks; are altogether unreliable. Follow the lead of thousands of other successful poultry farmers; invest in Tamlin's Incubator. We say Tamlin's advisedly, because all Incubators are not necessarily good ones, nor nearly equal in hatching qualities. Some hatch well with coaxing; some when the weather happens to be right for them. But

TAMLIN'S INCUBATOR

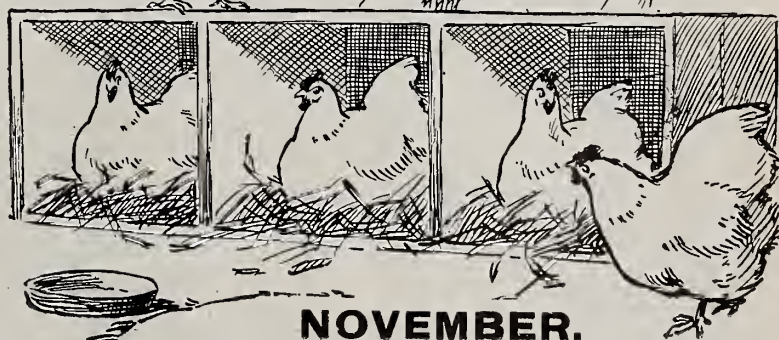
gives first-class results under all conditions. The climate does not count with Tamlin. Proof of its extraordinary hatching abilities is to be found in the enormous export sales every year, larger than the export sales of all other incubators put together. This is no figment of the imagination, but actual fact; 25 years of experience in making the same machine have taught us the perfecting of delicate mechanism, the choice of material, the exact adjustment of every detail necessary to produce the perfect hatcher. The Tamlin of to-day is indeed a triumph in Incubator construction, and to its possessor it means an end of all risk, worry, and possible loss of time.

Get in touch with Tamlin's to-day, send a postcard for the illustrated Catalogue that tells you all about the incubator, and in addition serves as a guide to 250 other appliances for Poultry.

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THE LARGEST MANUFACTURER OF INCUBATORS AND
POULTRY APPLIANCES IN THE WORLD.



NOVEMBER.

TRADE ITEMS.

Walker's Loose-Leaf Diaries.

We have pleasure in again calling attention to the loose-leaf type of book manufactured by the firm of John Walker and Co., Warwick Lane, E.C. The diaries are made in all sizes and bound in a variety of leather covers, and for the many advantages this type of book possesses it is the best on the market. The simplicity of construction prevents them getting out of order, the rings being solid and rigid. The series of expert manuscript books produced by the same firm also possess distinct advantages. The leaves can be torn out and inserted in separate transfer cases for various subjects. Whatever kind or type of diary, pocket, or note book is required, the same can be supplied by Messrs. Walker and Co. They contain no superfluous matter, and are easily the best of their kind.

The "Swan" Fountain Pen.

Twenty years ago, fountain pens were regarded by perhaps nine hundred and ninety-nine persons out of a thousand as luxuries, toys, and nonsense. To-day it is safe to state that perhaps forty per cent. of the men and twenty per cent. of the women of the British Isles use them. Fountain pens have displaced steel pens, they have also saved many gallons of ink formerly lost by evaporation, and they have made of writing a pleasure instead of a task.

To no one, perhaps, is the fountain pen of so much value at the present time as to our men at the front and to those who are in training. Quite apart from the extra convenience to the men which this pen gives, the encouragement to write is important, because the letters sent home are of great comfort to the recipients. But to be of real service the pen must be a good one. It is here where the "Swan" scores so heavily, for there is no more reliable pen upon the market.

Messrs. Mabie, Todd, and Co., the makers of the "Swan" pen, whose factory is in London, received a note from a wounded soldier the other day mentioning that his pen had got broken through someone stepping on it, and he makes the remark: "I would sooner have lost anything than my pen."

True Economy.

True economy in feeding consists in supplying foods of a high feeding value. False economy is to use foods merely because they are cheap. Among foods which contain a high proportion of valuable constituents may be mentioned "Clarendo" Malted Laying and Fatten-

ing Meals. These consist of scientifically milled cereals, blended in well-balanced proportions, to which is added granulated meat, malt, and milk. The Fattening Meal contains somewhat similar constituents as the Laying Meal, but instead of meat oats are used, and the whole contains a large proportion of fat-forming material. In both these foods is a proportion of "Vi-Do" Clarendo Malt-Tonic, which is not only a food in itself but has the effect of aiding the digestion of other foods with which it comes into contact. Samples and particulars will be sent on application to the proprietors, Messrs. White, Tomkins, and Courage, Ltd., 48, Mark Lane, London, E.C.

Messrs. Tamlin's Exports.

The following is a list of Mr. W. Tamlin's exports for August, September, October, and November: Three 60 incubators, three 100 incubators, three 100 foster-mothers, to Woodhead, Plant, and Co., agents for Capetown, per s.s. Intaba; six 100 incubators, six 100 Nonpareil foster-mothers, to Messrs. Goso and Martinez, agents for the Argentine, per s.s. Highland Corrie; three 30 incubators, three 60 incubators, three 100 incubators, to Mr. C. W. Champion, agent for Bloemfontein, per s.s. Galeka; six 60 incubators, to J. F. Marshall, agent for Johannesburg, per s.s. Galeka; total of 36 machines. It will be noted from the following list that Tamlin's exports for September have shown a decided increase, in spite of the war, over the month of August, though it must be noted the total now of 71 machines does not reach the usual total of their exports for this month in corresponding years: Six 60, also six 100 and six 30 incubators, to J. F. Marshall, agent for Johannesburg, S. Africa; two 60 incubators, one 60 foster-mother, to Nairobi, Africa, order of Newland, Tarlton, and Co.; six 30, also six 60 and three 100 incubators, to Harvey and Greenacre, Durban, S. Africa; six 60 and six 100 incubators, to A. F. Phillips and Co., agents for Bulawayo; ten 100 incubators, twelve foster-mothers, to Messrs. Chandler, Ltd., agents for Melbourne, Australia; one 30 incubator and one 60 foster-mother, to Tau Kian Eang, Ipoh, Federated Malay States; two 60 incubators, to Calcutta, India, order of Army and Navy Stores. The list of exports as shown below for October naturally show a decline on account of the war. It will be noted there is only one order of any size, which was shipped to Tamlin's Canadian agent. The others are only a few isolated orders. Thirty-five 100 incubators, twenty 60 incubators, ten 200 incubators, twelve 30 incubators, sixty brooders, to Fletcher Bradley, Ottawa, agent for Canada; one 100 incubator, to W. Thomas, Freemantle, Australia; one 100 incubator and one 100 foster-mother, to P. Cockerill, Calcutta; two 60 incubators and one 60 foster-mother, to W. P. Passmore, Rio de Janeiro; one 30 incubator, to R. Heath, Jamaica, West Indies; one 100

(Continued on next page.)

ECONOMY IN FEEDING

For Egg-Production, Chicken-Rearing,

FEED WITH

and Fattening for the Table

"Clarendo"

**COOKED FOOD - LAYING MEAL
MALTED MEAL and
MALT CULMS - DRIED GRAINS - DRIED HOPS.
"VIDO" MALT FOOD TONIC.**

FOR SAMPLES AND PARTICULARS, APPLY—

WHITE, TOMKINS & COURAGE, Ltd., 48, Mark Lane, London, E.C.

(Continued from previous page.)

incubator, to W. A. P. Griffiths, Singapore; one 100 incubator, to J. T. Richmond, East London, S. Africa. Again Messrs. Tamlin have to report a falling-off in their exports for last month. Fortunately they shipped one order of some consequence, but even in this case, on account of the high rates of money exchange, it makes the machines more expensive on arrival than in normal times. However, this speaks well for the machines even to have a demand under such circumstances. Thirteen 100 and twelve 200 incubators, fourteen 100 foster-mothers, three cramming machines, and six bone-cutters, to Messrs. Martinez and Hall, agents for the Argentine; one 100 incubator and one 100 foster-mother, to Norway, order of Army and Navy Stores; one 60 incubator, to W. C. Clements, Perth, West Australia; one 100 incubator and one 60 foster-mother, to Mr. T. Cheshier, Ceylon; two 60 incubators and one 100 foster-mother, to A. Reeves, Durban; one 30 incubator, to Mr. A. Jeeves, Lorenzo Marques; one 100 incubator, to Chili, South America.

Irish Exports in 1913.

Whilst the quantities of eggs exported from Ireland were slightly greater in four years previously recorded, the values in 1913 were above that of any corresponding period by £93,000. Poultry show a decline of nearly £50,000 from 1912, which was the maximum year. In both directions there has been a distinct advance in values. The statistics just published say that "the export of eggs and poultry together in 1913 amounted to £4,005,408, and if to this is added the export of feathers, amounting in 1913 to £42,680, a total export of £4,048,088 is recorded." This does not include supplies by parcels post, for which £60,000 may be estimated, thus bringing the gross total to upwards of £4,100,000.

Second Irish Laying Competition.

Miss L. Murphy presents a most interesting report of this competition in the *Journal of the Department of Agriculture for Ireland*, which must be left for full treatment in our next issue. Meanwhile, it may be interesting to give the breed averages, which are remarkably uniform:

Breed.	No. of Pullets.	Average weight (ozs.) per doz.	Breed Averages.
White Wyandotte.....	66	24.60	140.35
Rhode Island Red ...	84	24.96	141.23
White Leghorn	42	25.47	139.35
Brown Leghorn	18	24.66	120.26
Black Minorca	24	26.47	145.75
Buff Orpington	18	24.54	135.55
White Orpington	12	24.62	138.33
Sussex	18	23.93	137.28

A Sound Poultry Food.

The bane of many a poultry-keeper's otherwise happy existence is the food bill. How to feed fowls cheaply, and at the same time provide them with sufficient nourishment to maintain them in profitable condition, is a problem which poultry-keepers the world over are always trying to solve.

We have lately made a test of Uveco poultry food, and can speak very highly in its favour. It is made from the finest selected grain, is cleaned carefully and thoroughly cooked, and there is no waste. It can be used either as a mash or as a dry food. Being a cooked food, it requires no preparation, while all the nourishment is available for easy assimilation. Fed dry and scattered among the litter the birds scratch for it; as a soft food it only requires moistening with warm water or milk. It should be fed in a crumbly moist condition, on no account sloppy.

We have supplied it to laying hens and to growing stock, and it has given excellent results. It is a food that we can highly recommend.

PROLIFIC EGG-PRODUCTION

Read what the Poultry Editor of "The Smallholder" says about it:—

THE bane of many a poultry-keeper's otherwise happy existence is the food bill. How to feed fowls cheaply, and at the same time provide them with sufficient nourishment to maintain them in profitable condition, is a problem which poultry-keepers the world over are always trying to solve.

"We have lately made a test of Uveco Poultry Food, and can speak very highly in its favour. It is made from the finest selected grain, is cleaned carefully and thoroughly cooked, and there is no waste. We have supplied it to laying hens and to growing stock, and it has given excellent results. It is a food that we can highly recommend."

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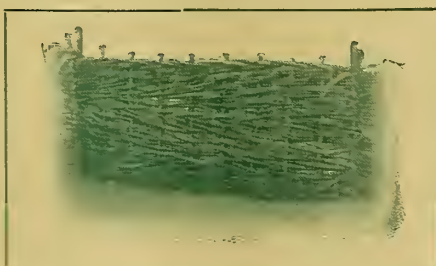
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